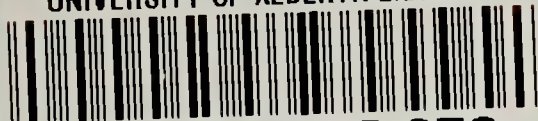


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BLUE JAY

JUNE 1984

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The *Blue Jay*, founded in 1942 by Isabel M. Priestly, is a journal of natural history and conservation for Saskatchewan and adjacent regions. It is published quarterly by the Saskatchewan Natural History Society, Box 1784, Saskatoon, Saskatchewan. S7K 3S1. CN ISSN 0006-5099.

Editor: Sheila Lamont.

Associate Editors: Margaret Belcher, J. Bernard Gollop, Wayne C. Harris, Ronald Hooper, George F. Ledingham, Robert W. Nero, Carol A. Scott.

Editorial Assistant: Carman Dodge

Circulation: Ron Jensen.

EDITORIAL INFORMATION: All items for publication should be addressed to the editor, Sheila Lamont at Box 414, Raymore, Saskatchewan. S0A 3J0. Deadlines for each issue are six weeks prior to issue, i.e., 15 January, 15 April, 15 July and 15 October. When possible two copies of manuscripts should be supplied.

Photographs submitted should be on glossy paper, (preferably 5 x 7" size). If photographers wish to have their photographs returned they should send negatives as well. Prints will be made from negatives or slides and they will be retained on file; the negatives or slides will be returned. Deadlines for photographic material are four weeks before the month of issue, i.e. the first of February, May, August or November.

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REPRINTS: Requests for quantities of reprints of any article in the *Blue Jay* should be sent to Midwest Litho Limited, Box 1466, Saskatoon, Saskatchewan, S7K 3P7 with one month of publication. Contributors wishing a few extra copies of the current *Blue Jay* may get them at cost. Requests for these should be made to the editor when material is submitted for publication.

SUBSCRIPTION-MEMBERSHIPS: Send all renewals, new memberships, and correspondence concerning changes of address to the Treasurer, SNHS, Box 1784, Saskatoon, Saskatchewan, S7K 3S1.

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Cover: *Nighthawk on young.* Chris Adam.

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SUSTAINABLE DEVELOPMENT

A SUBMISSION TO THE ROYAL COMMISSION ON THE ECONOMIC UNION AND DEVELOPMENT PROSPECTS FOR CANADA*

The Saskatchewan Environmental Society, on behalf of its members and affiliates, appreciates the opportunity to contribute its views. We believe that Canada's economic and ecological well-being are inseparable. This timely inquiry, with a mandate to view the long-term perspective, rather than find short-term "quick-fix" answers, must embrace the importance of that link. Our argument therefore relates to the basic conceptual orientation of your commission.

Economic Growth: Redefining "progress"

The economic system that has evolved is one in which growth — the production and consumption of goods and services on an ever-expanding scale — has become both an end in itself and the measure of how well or poorly the nation is faring. A sound economy is therefore defined in terms of growth which, when slowed or absent, raises alarm, generates considerable debate over who or what is at fault, and spawns studies and Royal Commissions.

The system is predicated on increasing the magnitude of exploitation of the resources upon which all economic activity is dependent. This has led to environmental deterioration and resource depletion, processes which are able to continue so long as the costs of those negative effects are left out of the economic equation. Accelerating consumption of diminishing resources yields declining returns per unit of effort (capital or labour) invested.

Thus, we find ourselves always at the margins, where the economic, environmental and social costs of perpetuating growth are continually greater at each successive increment. Any far-sighted examination must, in a world of finite resources, consider where over-exploitation for short-term gain is apt to lead.

In Saskatchewan cereal grain production seems a fitting example. Growth in this economic sector has been achieved by farming more of the land and farming more intensively. In just 80 years, the soil has been depleted of over half its original fertility (organic matter). As the costs (e.g. energy, fertilizers, chemicals) increase, the relative rates of return (as greater output of nutrients in the crops) declines. Yet government, through agencies like the Canadian Wheat Board, promotes not merely continued but accelerated growth, setting 50% increase targets for grain exports with little apparent concern for how long even current production levels can be maintained on a deteriorating soil resource base. The economic benefits of such growth can only be assumed by ignoring the future expense of restoring soil fertility or of coping with reduced productivity.

Awareness: The key planning ingredient

The degree to which planners and strategists in government are aware of the need for a redefinition of economic health is difficult to assess. The signals are often contradictory. On the one hand are such indications as the Nov-

*This brief was presented to the MacDonald Commission Hearings in Saskatoon.
It is reprinted here from the SES Newsletter

ember 1981 Department of Finance policy entitled *Economic Development in Canada for the 1980's*. This resource based, export-oriented strategy calls for massive investment and further expansion; in short, development is defined as spurring yet more growth.

In contrast are the recommendations of an interdepartmental Federal Review, led by Environment Canada, endorsing the World Conservation Strategy. The review proposes implementing ways to achieve sustainable economic and social development. It would be encouraging if this latter were the predominant view.

Equilibrium: The essence of a solution

Rather than consuming or exporting resources at ever-increasing rates, the primary objective of future economic development must be ecological sustainability. Resource use must be on a scale equivalent to resource renewal via material recycling and careful management. A "steady state" economy does not imply stagnation, nor preclude growth to new equilibria. However, "progress" would be measured in terms of such changes as qualitative improvements in social conditions, increased diversity of economic activity (yielding a more resilient, less vulnerable system), and efficiency improvements that would permit sustained production levels from decreased inputs.

We do not profess to have all the specific answers concerning economic restructuring toward the goal of sustainability. Nonetheless, many of the necessary developments and adjustments are known. Among them are:

- Improvement of renewable energy technologies. In concert with serious efforts to increase end-use efficiency this will enable us to phase-out non-renewable energy.

- Alterations to agricultural, fishery and forestry management practices. Sustainable yields that protect the integrity of the resource bases would be the highest priority.
- Development of closed-cycle industrial production with the objective of maximum material recycling. One industry's wastes may be another's resource.
- Rescaling many economic activities by adopting appropriate (human scale) technologies and labour-intensive formats. Production "efficiency" must include the idea that there are social benefits from providing meaningful employment.

Conclusion:

To be effective in the long run economic planning must spring from the concept of resource use in equilibrium with resource renewal. As with natural ecosystems, the components of the economic system are interconnected and interdependent. Accordingly, regional and national planning cannot be done in isolation. The overall context will be that of the Canadian economy within the world community. The transition will be neither rapid nor painless. But we must find the social and political will to move in this direction because sustainability ultimately means survival.

Strategies which do not contribute to this vital goal will divert or consume capital, energy and resources, thereby postponing an inevitable process and diminishing the opportunities for a gradual and successful transition.

Saskatoon, Saskatchewan
November, 1983.

'FRIENDS OF THE PARK' — PRINCE ALBERT NATIONAL PARK

After several years of talking about the idea of a 'co-operating association' at Prince Albert National Park, 'Friends of the Park' has become a reality. An official Memorandum of Agreement was signed by the group and Parks Canada on 24 January 1984.

Co-operating associations are relatively new in Canada, although they have operated in United States parks for a number of years. The *raison d'être* of a co-op association is, as the name implies, to give interested citizens a chance to work with Parks Canada to provide extra services to the public who visit national parks and historic sites. Parks Canada gives new associations a start-up grant, but each association operates as an independent non-profit organization.

Just what kind of 'extras' a co-op association offers varies from place to place. At Fortress of Louisbourg, for example, co-op members run an historic bakery, offer 'candlelight tours', and put on drumming demonstrations in period costume. At Point Pelee, volunteers have organized an Octo-birdfest, a cross-country ski workshop, and a camping weekend for the handicapped. Several co-ops also operate small sales outlets where they sell books on natural and human history as well as park-related souvenir items.

Friends of the Park will follow the lead of established co-ops and open a sales outlet at the Park this summer. In addition to a good inventory of books on natural and human history, we will offer a special publication on the life of Grey Owl, as well as a series of post-cards, and a set of hasti-notes featuring pen and ink sketches of the Park. A long-term goal of the group is to produce a series of publications including

a children's activity book; a pictorial history of the park, and a trail guide to Prince Albert National Park.

Although Friends of the Park is quite new, our numbers are quickly growing. Since our first public event last summer (an historic day at the park), we have signed up 90 members. The success of a co-operating association depends on the support of its members, and as the group becomes better known, we hope to involve many more people in proposed projects. Anyone who would like to become a member (for a nominal \$1.00/year fee) or volunteer time, or who has suggestions for future projects and events is encouraged to contact *Suzanne Henry*, Secretary, Friends of the Park, P.O. Box 11, Waskesiu Lake, Saskatchewan. S0J 2Y0 or call 663-5646.



*Kingsmere Lake,
P.A.N.P.*

Blake Maybank

MANITOBA RECORDS FOR THE SHOWY ASTER

WALTER KRIVDA, Box 864, The Pas, Manitoba. R9A 1K8

Many different species of wild asters look alike on casual inspection because their range of variation is wide. Fortunately, the Showy Aster (*Aster conspicuus* Lindl.) differs enough from all other wild asters that it is easily recognizable in the field.

The Showy Aster is a rather spectacular wild flower with coarse, rather thick and heavily toothed leaves. The flowers are violet. Plants may reach two feet in height, in good soil. They occur in scattered clumps.

The author became familiar with this species in 1965 in Prince Albert National Park and thought it to be a western species of the Alberta foothills and ranging into Saskatchewan.

There are no previously published records of Showy Aster in Manitoba. Three local collections in The Pas area have been made within a two mile radius of one another over a 20 year period. No other plants have been seen in the area. The collections were made on an extension of the Campbell Beach on which the Highway was surveyed by the early surveyors. It is an area underlain by gravel and has good drainage. The plants were not abundant.

In 1956 specimens were collected 1.5 mi. south of town, next to a P.F.R.A. temporary camp. The plants grew in clay along the woods. Just a couple of plants occurred here (herbarium #1797).

About 2 mi. south of the first collection, in an open field near the La Verendrye Motel (now a parking lot) a collection was made 10 August 1966 (66-185 in the writer's herbarium). Duplicates were sent out in exchange. A second collection 30 September 1966 from this site has mature seed. It is evidently frost hardy as by this date at The Pas many other plants are frozen. This collection looked fresh.

A third collection 1 August 1976 (#76-555) was less than 0.5 mi. from number 66-185 taken 10 years previously. In mid-August 1983 in the area where 76-555 was collected an extensive colony was found to exist in the heavy stand of poplar. Specimens were collected for exchange.



Showy Aster

Terry Dartnell

THE TWINING BUCKWHEATS OF EAST-CENTRAL SASKATCHEWAN

DONALD F. HOOPER, Somme, Saskatchewan. S0E 1N0

Breitung did not include the Climbing False Buckwheat in his catalogue of Saskatchewan plants and he gives only one location, seven miles southwest of Flin Flon for the Fringed Wild Buckwheat.¹ Our third twining buckwheat is Wild Buckwheat, the common introduced weed. Since 1957 additional records of the twining buckwheats have been reported for the province at locations other than east-central Saskatchewan.

Frankton and Mulligan describe the native twining buckwheats as follows: "The Fringed Wild Buckwheat, *Polygonum cilinode*, differs from all other species of *Polygonum* in having bristles at the base of the sheath and from Wild Buckwheat in its perennial habit, reddish stems, leaves with narrower spaces between the basal lobes, and smooth shiny seeds. Climbing False Buckwheat, *Polygonum scandens*, has a strongly winged calyx, long stemmed flowers, and smooth shiny seeds."²

The Wild Buckwheat (*Polygonum convolvulus*) has spread from farm-

lands into forested areas. It is often seen growing in trailing mats at the bulldozed skidways left from logging operations. In such locations it is so prolific that it looks like a different plant from the weed that is so common in grain fields.

The Fringed Wild Buckwheat (*Polygonum cilinode*) is an eastern species extending west into east-central Saskatchewan.⁵ During 1982 and 1983 Les Baker and I found the Fringed Wild Buckwheat in three different localities: First, a few plants along a trail on a stoney hillside in the Pasquia Hills, 23 miles southeast of Carrot River, 1 July 1982; second, growing in profusion with the Claspingleaved Twistedstalk (*Streptopus amplexifolius*) on the Woody Lake burn above 2,000 feet altitude on Brockelbank Hill, 13 miles south of Armit, 29 June 1983; third, in an old gravel pit, near Bainbridge campsite in Pasquia Hills, 49 miles north of Hudson Bay, 6 September 1983. Dr. V.L. Harms was with us on the trip to Brockelbank Hill.



Strongly winged calyx of Climbing False Buckwheat. X3



Reflexed bristles at the base of the sheath of Fringed Wild Buckwheat. X3

The Climbing False Buckwheat (*Polygonum scandens*) known in Saskatchewan by J. Macoun from before settlement, has recently been rediscovered and it is still listed as one of the rare plants of the province.³ I know of five localities of this species in east-central Saskatchewan but it is not abundant in any area. Possibly it is not hardy and it may die out during severe winters and then slowly re-establish itself. (In the east it does not occur north of Thunder Bay, Ontario or Three Rivers, Quebec.⁶) I have seen it on the fireguard above Swan River, 20 miles ESE of Reserve, 23 August 1983; on the southern slope of Thunder Hill, north of Arron, 23 August 1983; on disturbed banks along Somme-Reserve forestry road, 5 miles SE of Somme, 28 August 1983; and on bulldozed bank, 5 miles SE of Weeks, 28 August 1983. Wayne Harris recorded it in Greenwater Provincial park in 1983. There are reports of this species from the two western provinces but they require confirmation.^{5 6}

¹BREITUNG, A.J. 1957. Annotated catalogue of the vascular flora of Saskatchewan. Am. Midl. Naturalist, Notre Dame, Ind.

²FRANKTON, C. and G. MULLIGAN Revised 1970. Weeds of Canada. Can. Dept. Agric., Ottawa.

³HUDSON, J.H., V.L. HARMS and G.W. ARGUS. 1979. Rediscovery of the Climbing False Buckwheat in Saskatchewan. *Blue Jay* 37(1):20-23.

⁴MAHR, R.V., G.W. ARGUS, V.L. HARMS and J.H. HUDSON. 1979. The rare vascular plants of Saskatchewan. Nat. Mus. of Natural Science, Syullogeus No. 20, Ottawa.

⁵MOSS, E.H. (Revised by J. Packer) 1983. Flora of Alberta. Univ. of Toronto Press, Toronto, Ontario.

⁶SCOGGAN, H.J. 1978. The flora of Canada. Nat. Mus. of Canada, Ottawa.

AN UNUSUAL FUNGUS

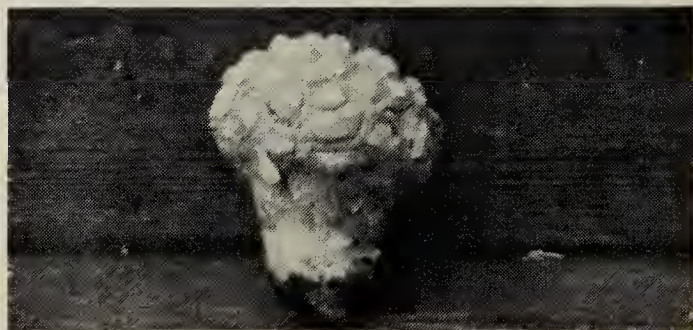
DAVID L. BRADDELL, Box 304, Reston, Manitoba. R0M 1X0

On his farm seven miles northwest of Reston and immediately east of the Pipestone Creek, Darwin Lazenby discovered a large fungus poking out of the lawn 23 June 1983.

The specimen, broken off at ground level, was 5.25 in. (approx. 13 cm) long and 4.75 in. (approx. 12 cm) across. Pale ivory in colour, it had no volva and was somewhat flatly rounded at the peak. Most interesting were the barnacle-like protrusions that patterned the crown. The irregularly sized and shaped "barnacles" bore concentric lines close together on their sides. The stem was thick and slightly tapered towards the base. Basal margins of the "barnacles" were coloured dark beige.

Having been only refrigerated, the specimen deteriorated by the time it became possible to have it professionally examined. Details about the fungus, however, caused Dr. Ronald S. Jackson of the Botany Department, Brandon University, to state that the specimen was most likely a member of the species *Calbovista subsculpta* and that this puffball had no common English name. Without a specimen, positive identification was impossible, but the one shown in the enclosed photo, he said, fit the macroscopic features of *C. subsculpta* well.

Has anyone else observed this type of fungus? Can anyone else add to the above information?



Calbovista subsculpta David L. Braddell

THE BLACK WIDOW SPIDER IN SASKATCHEWAN

WAYNE LYNCH, #104 528 15th Avenue S.W., Calgary, Alberta. T2R 0R2

The Black Widow Spiders have acquired an evil reputation, although no one in Canada has ever died from the bite of either of the two species found in this country. In Western Canada, the Black Widow [*Latrodectus herperus* (Chamberlin & Ivie)] is very common and widespread throughout the dry grassland regions of southern Alberta and southwestern Saskatchewan, and the arid parts of southern British Columbia, though it is rarely seen. The spider varies greatly in its markings at different stages, and in different regions, but the one unchanging feature of the adult female is the general blackness of her body and legs, and the red hourglass-shaped marking on the underside of her abdomen.

The common name Black Widow refers to the intriguing reproductive strategy that has evolved in the spider. Black Widows build their webs in natural cavities or abandoned rodent burrows. The web of the female Black Widow contains a pheromone (odour hormone) that identifies her to the male spider. At the start of courtship, the male (about 1/10 the size of the female, and patterned in grey, tan and orange) approaches the edge of the female's web and plucks out a vibratory message to her.

Like all web-building spiders, the Black Widow has relatively poor eyesight and she relies on vibrations transmitted through her web to signal the



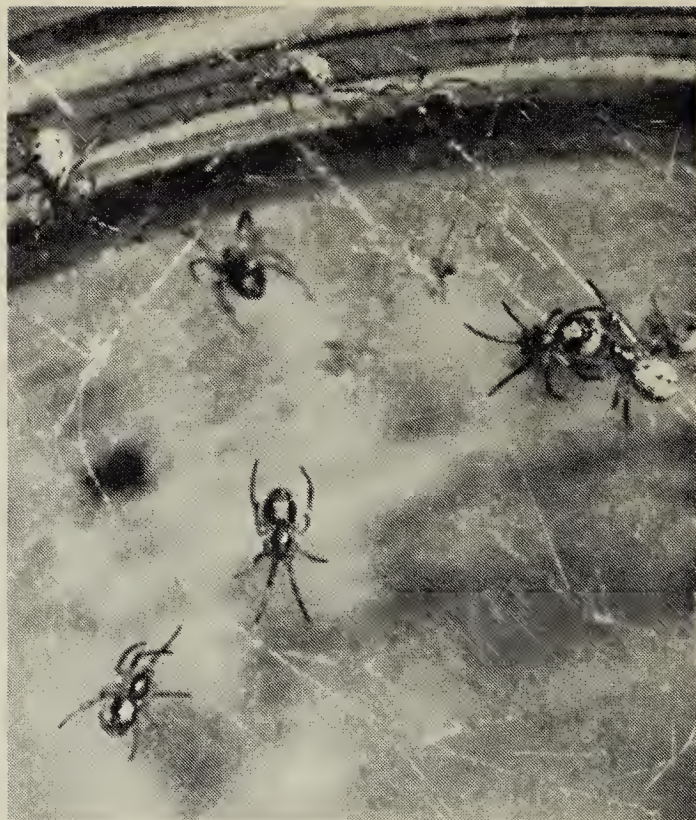
Black Widow Spider with egg sac.

Wayne Lynch

presence of prey, or the approach of a mate. The predatory habits of spiders makes recognition of the sexual partner especially important. If the female is receptive, the male approaches and mating proceeds. Afterwards, the male usually lingers on the female's web and she eats him. In this way the male contributes to the nutritional well being of the female, and increases the likelihood of successful egg laying. The female lays her eggs anywhere from 7 to 305 days after mating.

This was the stage at which I found my Black Widow. I collected her 15 miles west of Consul, Saskatchewan on 23 June 1983. The web was on the superior aspect of an abandoned fox den, about 8-12" back from the upper lip of the burrow. I kept the spider in a 500 milliliter peanut butter jar, and within hours of capture she had spun a disorderly web inside the jar. She spent her time hanging beneath the web, her scarlet hourglass advertising her identity. On the morning of 1 July her abdomen was markedly shrunken and she had spun a globular, cream-coloured, silken egg sac (in the wild the Black Widow prepares one to three egg sacs, but as many as 21 have been reported). For weeks after that she was always beside her eggs, and only left them to feed on dead house flies that I provided. Except for ten days when I kept the spider refrigerated at 50° F, she and her eggs were maintained at average room temperature. On 17 August there was a tiny hole in the egg sac and the web was sprinkled with 49 spiderlings (egg sacs typically contain 150-600 eggs). In the wild the life span of a Black Widow is rarely as much as a year and they die shortly after laying their eggs. The young spiders disperse soon after hatching to lead solitary lives.

Through the grapevine the Saskatchewan Museum of Natural History learned of my spider, and asked that she and her offspring be donated to



Black Widow spiderlings. Wayne Lynch

the Museum, as there were no Black Widows in their spider collection. It surprised me that so little is known about the spider's distribution in Saskatchewan, and that there are few records of sightings. If any of the readers have seen the Black Widow in the prairies I would appreciate hearing about it. I am particularly interested in the location, date, and circumstances. Please send the data to the author at the address given above. Some useful references are listed below.

- CURTIS, L. COLIN. 1980. Black Widow Spiders. Publication 1214, Agriculture Canada. 5 pp.
- FOELIX, R.F. 1982. Biology of Spiders. Harvard University Press, Cambridge.
- GERTSCH, WILLIS J. 1979. American Spiders, 2nd Edition. Van Nostrand Reinhold Company, New York. 274 pp.
- KASTON, B.J. 1970. Comparative Biology of American Black Widow Spiders, Transactions of the San Diego Natural History Society. 16(3):33-82.
- LEVI, HERBERT W. 1968. Spiders and their kin. Golden Press, New York. 160 pp.

COLLECTING VERTEBRATE PALAEONTOLOGICAL SPECIMENS IN SASKATCHEWAN

TIM TOKARYK, Palaeontological Preparator, Saskatchewan Museum of Natural History, Wascana Park, Regina, Saskatchewan. S4P 3V7

The journal *Discover* recounts how James Jensen of Brigham Young University found in 1964 "the only Jurassic Period skeleton ever discovered of the turkey-sized dinosaur called *Hypsilophodon*. He took the bones back to his laboratory still embedded in a block of stone and dirt only to realize that the wrists and forefeet were missing; they were still in the ground." He went back to the site but rock hounds had been there and dug the area up. "It was as if you had put the hill in a paper bag and shaken it up. We may never find another Jurassic *Hypsilophodon*. We may never know what the forefeet looked like."¹

There is a serious debate as to who should have the right to collect. Some geologists and fossil dealers, like Pete Larson will maintain that the scientific community has not lost anything from what commercial fossil dealers have done.¹ The Society of Vertebrate Palaeontology on the other hand went on record in 1973 as "opposing the sale to the public of fossil specimens of any sort."³ Everyone agrees however that we should protect the fine fossil specimens of Saskatchewan.

In 1979, the Heritage Property Act was passed.² It is important for everyone to know what the act says concerning the collecting of fossil vertebrates; the major provisions are as follows:

66-(1) Every archaeological or vertebrate palaeontological object found or taken from the land of Saskatchewan after the coming into force of this Act is deemed to

be the property of the Crown.

(2) All archaeological or vertebrate palaeontological objects found in or taken from the land of Saskatchewan other than those mentioned in subsection (1) must be registered with the minister within two years from the coming into force of the Act, and where they are not so registered within that two-year period, they become the property of the Crown as soon as the minister gives the person in possession of those objects written notice of the Crown's claim of ownership.

(3) No person shall buy, sell, trade or otherwise dispose of or remove from Saskatchewan for the purpose of selling, trading or otherwise disposing of any archaeological or vertebrate palaeontological object found in or taken from the land of Saskatchewan without written permission of the minister.

(4) In a prosecution under subsection (3), the onus of proving that the object was not found in or taken from land in Saskatchewan is on the person who alleges that it was not so found or taken.

67-(1) No person shall:

- (a) carry out a survey;
- (b) make surface collections; or
- (c) conduct excavations;

for the purpose of obtaining archaeological or vertebrate palaeontological objects or information of those objects, unless he holds a valid and subsisting research permit granted pursuant to this section.

71-(1) Any person, other than a holder of subsisting permit who discovers a previously unknown site containing archaeological or vertebrate palaeontological objects shall, within 15 days of his discovery, notify the minister.

(2) The minister shall provide suitable recognition to any person reporting a discovery mentioned in subsection (1).

73-(1) Any person who contravenes any provision of this Act or the regulations, or any order or direction made or given pursuant to this Act or the regulations, is guilty of an offence and liable on summary conviction [to a fine and/or imprisonment].

The provisions of the Heritage Property Act are purposefully strict in order to preserve the natural history of Saskatchewan.

The Saskatchewan Museum of Natural History, Earth Sciences department, has summer field expeditions to collect vertebrate palaeontological specimens. Some major finds have also come from the public, when individuals discover an important specimen such as the titanotherium collected in 1973 (Tillie, 1973) and the mastodon jaw collected in 1981.⁴

The museum welcomes reports of fossil specimens found by private individuals. If the find seems promising, we will make every effort to visit the locality to make an assessment. But we do advise that if you do find any fossil or artifact, leave it there, mark the location and inform Dr. John Storer or myself at the museum. The specimen should not be removed; often a fossil looks solid but when you pick it up, it disintegrates. The museum is also hoping to examine private collections made before the passage of the Act.

If a fossil is a major find, it may be recognized by being reported in scien-

tific literature. Even if it isn't a major find, it may be a specimen not well represented in the museum collection, and which we would be most pleased to have donated to us; a warm letter thanking you will follow. But do not dig anything up before you check.

In the early part of this century, western Canada (mainly southern Alberta) was pillaged by collectors from museums all over the world. It wasn't until the National Museum of Canada and the Geological Survey of Canada realized how much fossil material was leaving the country, that they decided to collect for themselves. Although the N.M.C. and the G.S.C. collected a fair amount of material, the other museums who were here first got the "cream of the crop". The only way we can now obtain those fossils that were found in Canada, and are now out of the country, is by purchasing or trading. In future, we hope to prevent such materials from leaving Saskatchewan.

Applications for permits for both archaeological and vertebrate palaeontological investigations should be made to Saskatchewan Culture and Recreation.

¹GORMAN, J. 1982. Fossils for Sale. *Discover*. April, 1982:30-32.

²Heritage Property Act, 1979.

³Society of Vertebrate Paleontology. 1973. 97:4.

⁴TILLIE, R. 1973. A Fossil First for Canada. *Blue Jay*. 31:242-243.

1982 CENSUS OF SASKATCHEWAN WHITE PELICAN AND DOUBLE-CRESTED CORMORANT COLONIES

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The Saskatchewan Museum of Natural History undertook a censusing program designed to determine and monitor the status of the pelican and cormorant colonies in Saskatchewan, continuing the work of Vermeer and Boeker.^{9 2} The program also set out to provide additional protection and management for the breeding colonies of these two species. The first census was conducted in 1976 with subsequent censuses being carried out every two years. In 1976, a ground nest census was conducted, while the following censuses employed an aerial photographic technique that is highly reliable and has the added desirability of eliminating harmful disturbance to the colony particularly during the critical incubating period.^{4 5 6}

In 1982, White Pelican and Double-crested Cormorant nest census was conducted through the combined efforts of the Saskatchewan Museum of Natural History (SMNH), Saskatchewan Parks and Renewable Resources (SPRR), and the Canadian Wildlife Service (CWS). 1982 was also the final year the Saskatchewan Museum of Natural History was directly responsible for this census. In the future S.P.R.R. will conduct the program with assistance from other agencies.

Ten pelican and twenty-four cormorant colonies were censused with a total of 15,480 and 10,971 nests

counted respectively. The number of pelican nests was similar to the 15,427 recorded in 1980 however, the number of islands being utilized decreased by two, from 12 to 10. The number of cormorant nests increased from the 7,410 and the nesting sites increased from the 17 recorded in 1980.

Methods

During the peak incubating period from 31 May to 5 June 1982 aerial censuses were flown to determine the number of White Pelican and Double-crested Cormorant nests in Saskatchewan. Censuses were flown at an altitude of 200 m and census times ranged from 0615 to 1025 hours and 1515 to 1700 hours. These census times were chosen to avoid the midday period when the major nest relief of incubating adults is reported to occur and to eliminate to a great degree, counting non-incubating birds.^{7 3} One colony was censused during the critical midday period. The South Saskatchewan River cormorant colony was flown at 1256 hours, however the problem of discerning between incubating and non-incubating birds was not considered to be a factor in this case since the colony is small, consisting of only two nests located in trees.

Color transparencies (Kodachrome 64) were taken of the colonies using a hand held Pentax KX 35 mm camera with a 200 mm telephoto lens. The

number of nests in each colony was determined by counting the number of incubating adults while viewing the slides under a stereo microscope and while projecting them onto a screen.

Results

Ten active White Pelican colonies situated on nine lakes were censused in 1982 (Primrose Lake contained two pelican nesting islands). The pelicans nested within the same water bodies in 1982 as they did in 1980 but occupied two fewer nesting islands. One island was abandoned in each of Mud (Middle Quill) and Primrose Lakes.

A total of 15,480 nests were counted in 1982 (Table 1), an increase of 53 nests over the 1980 census when 15,427 nests were reported.⁶ While the breeding population has remained stable between the two censuses, significant changes have occurred in the number of nests in specific colonies. The number of nests increased at Primrose Lake from 4,834 in 1980 to 6,822 in 1982 (+48%) and at Redberry

Lake from 168 to 240, a 43% increase, in the same period. In the remaining eight colonies fewer nests were counted in 1982 than had been reported in 1980. The declines in the numbers of nests recorded in each colony between the two years were as follows: Mud Lake, -218 nests, from 655 in 1980 to 437 in 1982 (-33%); Lenore Lake, -68 nests, 110 to 42 (-62%); Lavallee Lake, -221 nests, 3,790 to 3,569 (-6%); Kazan Lake, -159 nests, 768 to 609 (-21%); Preston Lake, -180 nests, 275 to 95 (-65%); Old Wives Lake, -458 nests, 3,075 to 2,617 (-15%), and Suggi Lake, -703 nests, 1,752 to 1,049 (-40%).

Twenty-six cormorant colonies, 24 of which were active and two of which were inactive, were censused in 1982. Of the 24 active colonies, five were first located and censused in 1982; three in Churchill Lake and two in Last Mountain Lake. In Churchill Lake, cormorants nested on one island in 1978, abandoned it in 1980, and nested again in 1982 at which time they established nests on an additional three



White Pelicans at Last Mountain lake

G.L. Holroyd

islands. Other colonies recently located and investigated are as follows: the Alkali Lake colony was reported in 1980 (Phil Browne, pers. comm.) when 20 nesting pairs were counted. It was checked in 1981 by Saskatchewan Parks and Renewable Resources personnel who recorded 40 nests (Syd Barber, pers. comm.). The South Saskatchewan River colony was first reported in 1980 (Cam Scheelhaase, pers. comm.) but not investigated until 1982.

One of the inactive cormorant colonies was located on an island in an unnamed lake 8 km south and 1.6 km east of Khedive. This colony had at

some time contained 60 nests but had since deserted. The other inactive colony was located on Montague Lake which was known to have contained 11 active nests on June 9, 1981 but which was found abandoned on a subsequent check on July 15, 1981. In addition to these colonies one nesting island located in Mud Lake was found to have been abandoned since the 1980 census when two islands were utilized as nesting sites at that location.

The total number of cormorant nests counted in 1982 was 10,971 (Table 1), an increase of 3,561 nests (48%) over the 1980 nest census.⁶

Table 1. NEST CENSUS OF PELICAN AND CORMORANT COLONIES

<i>Location</i>	<i>Date</i>	<i>Census Time</i>	<i>Pelican Nests</i>	<i>Cormorant Nests</i>
Mud Lake				
(Middle Quill)	May 31	0755	437	27
Lenore Lake	May 31	0830	42	651
Last Mt. Lake	May 31	0915	—	1202(4) ^a
Unnamed Lake				
(Khedive) ^b	June 1	0800	—	—
Alkali Lake ^c	June 1	0820	—	15
Montague Lake ^d	June 1	0855	—	—
Old Wives Lake	June 1	0905	2617	147
Reed Lake	June 1	0935	—	141
Cypress Lake	June 1	1025	—	329
South Sask. River ^e	June 1	1256	—	2
Redberry Lake	June 1	1700	240	53
Suggi Lake	June 3	0725	1049	1666(2)
Lavallee Lake	June 3	1010	3569	899
Dore Lake	June 3	1515	—	1464(2)
Churchill Lake	June 4	0615	—	790(4)
Preston Lake	June 4	0722	95	—
Kazan Lake	June 5	0810	609	2544
Primrose Lake	June 5	0950	6822(2)	1041(2)
TOTAL			15,480(10)	10,971(24)

a — Indicates number of nesting islands, if more than one.
b — Abandoned cormorant colony located during census, 8 km south and 1.6 km east of Khedive (60 deserted nests)
c — First reported in 1980 (20 nesting pairs); censused by SPRR on 16 June 1981 (40 nests)
d — Cormorant colony located on 9 June 1981 (11 nests); found abandoned when checked again on 15 July 1982
e — Reported nesting 21 July 1980

Fifteen water bodies were utilized as nesting locations in 1982 of which 12 had also been used in 1980. Comparing the number of nests recorded in 1980 and 1982 at these twelve locations, the colonies at Old Wives, Mud, and Lenore Lakes are seen to have declined in nests counted while the nest counts increased at the remaining nine locations.

The Old Wives Lake colony dropped by 546 nests, from 693 in 1980 to 147 in 1982 (-79%); Mud Lake, -48 nests, from 75 to 27 (-64%); and Lenore Lake, -19 nests, from 670 to 651 (-3%).

Large increases in the numbers of nests recorded occurred at Suggi Lake, +513 nests, from 1,153 to 1,666 (+44%); Kazan Lake, +957 nests, from 1,587 to 2,544 (+60%); Primrose Lake, +582 nests, from 459 to 1,041 (+127%); Last Mountain Lake, +413 nests, from 789 to 1,202 (+52%); Reed Lake, +79 nests, from 62 to 141 (+127%); and Dore Lake, +615 nests, from 849 to 1,464 (+72%). Moderate increases in the number of nests were recorded at Lavallee Lake, +152 nests, from 747 to 899 (+20%); Redberry Lake, +10 nests,

from 43 to 53 (+23%); and Cypress Lake, +46 nests, from 283 to 329 (+16%).

Discussion

The results of censuses conducted since 1976 indicate that the Saskatchewan breeding populations of White Pelicans and Double-crested Cormorants have increased in recent years (Table 2).^{4 5 6}

To an undetermined degree this population increase is attributed to improved census techniques and more extensive censuses. The census method has evolved from a ground census in 1976, to aerial censuses conducted only during the morning (0600 to 1030 hours) in 1978 and 1980, to the present morning/afternoon aerial census. It is believed that the latter method produces the most accurate results given limited financial resources and the need to conduct the census in a relatively short time span in order to census all colonies during the peak incubation period. The flying of surveys in the afternoon was initiated in 1982 on the basis of the work of

Table 2. PELICAN AND CORMORANT NEST CENSUS RESULTS 1976 - 80

Location	1976		1978		1980	
	Pelican	Cormorant	Pelican	Cormorant	Pelican	Cormorant
Cypress Lake	—	320	—	395	—	283
Old Wives Lake	1420	319	3084	658	3075	693
Reed Lake	—	—	—	—	—	62
Lenore Lake	—	—	—	—	110	670
Last Mt. Lake	—	117	—	337	—	789
Mud Lake	138	267	232	72	655	75
Redberry Lake	89	29	72	24	168	43
Suggi Lake	325	220	913	579	1752	1153
Dore Lake	—	130	—	270	—	849
Lavallee Lake	1293 ^a	299 ^a	3019	651	3790	747
Primrose Lake	2313	43	4007	124	4496	459
Churchill Lake	—	—	—	104	—	—
Preston Lake	—	—	—	—	275	—
Kazan Lake	275	1300	952	753	768	1587
TOTAL	5,853	3,044	12,279	3,967	15,427	7,410

^a - 1975 results

Beaver and Lewin who found that the number of loafing birds present at the nesting site declined during the day and was lowest in the late afternoon and evening.¹ They suggested that evening counts might be more accurate since fewer loafing birds are present at this time. The census method is also a compromise between the need for accuracy of nest counts and the need to limit the disturbance of the incubating birds. Such disturbance has two deleterious effects in that it exposes unprotected eggs to predation, and in the case of aerial censuses, reduces the researcher's ability to discriminate between those birds which are incubating and those which are not. Sidle and Ferguson took photographs of the White Pelican colony at Chase Lake, North Dakota, from altitudes of 70 and 137 m to obtain good image resolution.⁸ They noted that flying at these heights did not appear to disturb the birds. Test flights over Saskatchewan colonies showed that the birds became excited and left their nests when censused at an altitude of 150 m thus requiring censuses to be conducted above this altitude. Photographs taken from this height were of sufficient clarity for reliable nest counts to be made. The difference in the above described responses of birds to overflights may be due to some habituation to human presence by the Chase Lake pelicans since this colony has been the subject of numerous studies.

Saskatchewan contains almost one-half of the total Canadian breeding population of White pelicans, 15,480 pairs nested in only 10 localities in 1982. The species colonial nesting habit makes the population vulnerable to significant losses should a natural catastrophe or human disturbance destroy one or more of the colonies. The effect would be especially severe if a major colony such as Primrose Lake, which in 1982 contained 6,822 nests or 44 percent of the total provin-

cial pelican nests, was destroyed. The large increase in the Primrose Lake colony enabled the total nest counts to remain similar in 1982 as in 1980 in spite of a decline in the number of nests for eight of the ten colonies. Why did the Primrose Lake colony experience such a large increase? Did this increase result from birds coming from the other colonies that suffered a loss? The whole question of movement of birds between colonies and colony fidelity has yet to be studied and fully understood and is an area where future work is required.

As a result of the censusing program since 1976, the status of the pelican and cormorant breeding population has been monitored, sensitive nesting areas where colonies may be subjected to disturbance have been identified, and management proposals providing added protection for the colonies have been recommended to SPRR. Through discussions with SPRR, regulations were drawn up of which many have now been legislated. The major regulations passed include the following:

1. All pelican nesting islands have been designated as Wildlife Refuges,
2. From the period 15 April to 15 September, no person shall enter or approach within 100 metres of the following refuges unless special permission is granted by the Director of Wildlife.
 - (a) Gatehouse Island Wildlife Refuge (Kazan Lake)
 - (b) Heglund Island Wildlife Refuge (Cypress Lake)
 - (c) Isle of Bays Wildlife Refuge (Old Wives Lake)
 - (d) Lenore Lake Wildlife Refuge
 - (e) Mud Lake Wildlife Refuge
 - (f) Primrose Lake Wildlife Refuge
 - (g) Preston Lake Wildlife Refuge
 - (h) Redberry Lake Wildlife Refuge
 - (i) Rock Island Wildlife Refuge (Doré Lake)

(j) Scheelhaase Island Wildlife Refuge (Suggi Lake)

In addition to the above pelican colonies protected, the cormorant colony at Cypress Lake and the Caspian Tern colony at Doré Lake are also included.

Public awareness and observance of these regulations will aid in reducing the amount of disturbance these colonies receive and will help in assuring the continued existence of these magnificent birds.

Acknowledgements

Much thanks are extended to Dave Dalke, SPRR, who so capably piloted the census. I wish to thank Mr. Bruce Wilson, Superintendent, Prince Albert National Park, and the Department of National Defence, Medley, Alberta, for granting permission to census the colonies in Lavallee and Primrose Lakes, respectively.

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³KNOPF, F.L. 1975. Spatial and temporal aspects of colonial nesting of the White Pelican, *Pelecanus erythrorhynchos*. Ph. D. thesis. Utah State Univ., Logan, Utah. 76 pp.

⁴RONEY, K. 1978. Pelicans, Cormorants and Great Blue Herons in Saskatchewan in 1976. Blue Jay 36:28-35.

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RAPTOR COLLISIONS WITH UTILITY LINES

A Call for Information

The U.S. Bureau of Land Management, Sacramento, in cooperation with the Pacific Gas and Electric Company, is assembling all available published and unpublished information concerning collisions of raptors with power lines and other utility lines. Actual case histories — no matter how circumstantial or fragmentary — are needed. Please acknowledge that you have such information by writing to Dr. Richard R. (Butch) Olendorff, U.S. Bureau of Land Management, 2800 Cottage Way, Sacramento, California 95825 U.S.A. (Phone (916) 484-4541). A form on which to record your information will be sent by return mail.

WILLOW PTARMIGAN IN THE BOREAL FOREST OF THE PRAIRIE PROVINCES

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Willow Ptarmigan are annual winter visitors to the boreal forest zone of the prairie provinces. Experiences during a number of winter visits to points in northern Alberta and Saskatchewan suggested to me that ptarmigan only occurred in numbers at any given locality during a restricted part of each winter. To determine whether there

were in fact definite patterns of seasonal prevalence which, further, might show regional differences within the large wintering area, I sent a questionnaire dealing with this and other topics about these birds to wildlife officers of the settlements shown in Figure 1. Localities from which reports were received were divided into a southern

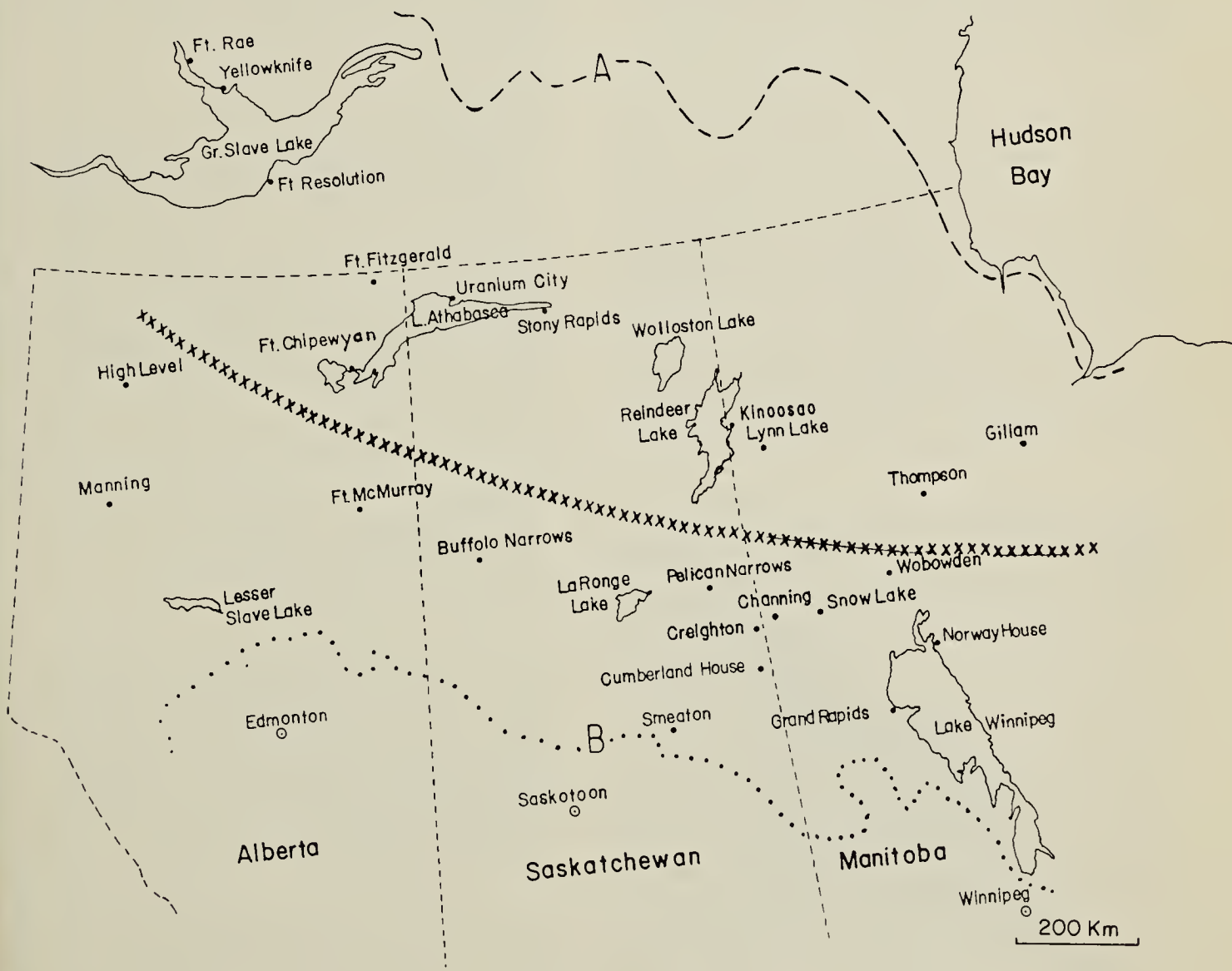


Figure 1. Map of the Canadian prairie provinces and the Great Slave Lake area indicating localities from which reports on the seasonal prevalence of Willow Ptarmigan were received. Line A (dashed) is the northern limit of the boreal forest. Line B (dotted) is the southern limit of boreal forest. The crosses give the line of demarcation between southern and northern reporting areas.

zone near the southern edge of the boreal forest and a northern zone well within it (Fig. 1). Information obtained directly from residents in some areas and my own limited observations were also considered. Forty-three replies to questionnaires dealing with one or more of the winters of 1971-72, 1974-75 and 1975-76 were received.

Seasonal prevalence in winter

The questionnaire asked during what period(s) six (an arbitrary number) or more ptarmigan per day were seen. Sixteen (out of 21) reports from the southern zone reported ptarmigan in such numbers only in mid-winter (i.e. November-February). There was only one April report and reports of two periods of prevalence during the same winter.

From the northern zone only 4 out of 22 reports showed observations restricted to mid-winter. Ten of the "northern reports" recorded two separate periods of prevalence in the same winter, e.g. November 20 - December 30 and February 20 - March 30 at Kinoosao, Saskatchewan in 1971-72. There were seven reports of ptarmigan seen in some numbers as late as April and one in May.



*Willow Ptarmigan near Uranium City,
Saskatchewan* Dr. J.G. Beatty

This information indicates that in the northern area, ptarmigan are often numerous only during their southward fall passage and again during their northward spring migration. Only about one fifth of the reports from the northern area indicate that occurrence in numbers is restricted to mid-winter. In the southern area, the birds are generally prevalent only in mid-winter, between the fall and the spring migrations.

It is well known that ptarmigan populations are subject to considerable fluctuation. The reports for the winter of 1974-75 showed that 1974 was a year of below average numbers for the area under consideration. Patterns of seasonal prevalence in the forest zone were, nevertheless, much as in other years.

Sex ratios

Weeden has shown that in Rock and Willow Ptarmigan in Alaska males winter near the breeding area, whereas females moved further south into forested areas which these species use only in winter.¹¹ To obtain information on such partial segregation of the sexes in Willow Ptarmigan in the area under consideration, data on sex ratios was sought in questionnaires and was supplemented from birds collected by myself, from museum specimens and from the literature.

The data summarized in Table 1 show that in the southern zone of the boreal forest over 3 times as many females as males were collected but that both sexes were represented in equal numbers in the northern zone.

Overall the sexes in this species are present in approximately equal numbers. Jenkins *et al.* reported 55.9% males in the conspecific* Red Grouse.⁷

* Conspecific — of the same species, applied to individuals or to populations of the same species.

Table 1. SEX RATIOS OF WILLOW PTARMIGAN COLLECTED IN WINTER.

<i>Zone and Locales of Collection</i>	<i>Males</i>	<i>Females</i>
Northern Boreal Forest: Western Great Slave Lake area; Ft. Smith, N.W.T.; northern Alberta and Saskatchewan	43	42
Southern Boreal Forest: North-central Alberta, Saskatchewan and Manitoba*	20	74

*The sex of 30 birds collected at Creighton was determined by wing length;² in all others, the gonads were inspected.

Since females predominated in the southern zone, while the sexes were represented in equal numbers in the northern forest zone, males must predominate in the remaining wintering areas of the species, the tundra. Porsild's report that in winter many more males than females were shot in the MacKenzie Delta support this view, as does the preponderance of males at the northern edge of the forest zone in the Brooks range in Alaska observed by West *et al.*^{8 14}

Factors which may be involved in the different distances to which the sexes migrate are considered in the discussion.

Migratory flights

Ptarmigan are not often seen in evident migratory flights, however, the limited number of observations available for the area, are predominantly of northeastward flights in spring and southwestward ones in fall; rather than along a north-south axis as might have been expected: Available observations are summarized below; no authority is cited for observations based on questionnaire replies.

Spring movements

FORT FITZGERALD, ALBERTA:
Soper observed a succession of large flocks flying over the settlement in a northeasterly direction 23 April 1933.¹⁰

URANIUM CITY AREA, SASKATCHEWAN:
Mr. S. McDonald, a local trapper, reports that from late March through early April in several different years he has seen flocks, generally of about 50 birds, arriving at the north shore of Lake Athabasca after they had crossed the lake on a north-easterly course.

FORT CHIPEWYAN AREA, ALBERTA:
McDonald also reports several times having seen in early spring flocks that reached the north shore of this part of Lake Athabasca after following a northeasterly course. He has not seen ptarmigan crossing this lake in the fall.

His observations include some points of interest apart from the matter of the direction of movements. He reports that flights over the lake took place early in the morning, the birds flying only about 1.5 m above the frozen lake. After making landfall, the ptarmigan would feed for an hour or so. Then one bird flying off inland would be followed by others in increasing numbers until the whole flock moved on.

CREIGHTON, SASKATCHEWAN:
A single flock of about two thousand birds was seen flying northward at a height of about 90 m above the ground in March 1973.



Snow holes where Willow Ptarmigan spent the night near Ft. McMurray, Alberta
E. Otto Höhn

Fall movements

URANIUM CITY AREA, SASKATCHEWAN:

Two flocks, each of about fifteen birds, were seen leaving the north shore of Lake Athabasca on a southwesterly course in an apparent lake crossing flight in early December, 1975.

FORT RESOLUTION, NORTHWEST TERRITORIES:

In October 1976, "hundreds of ptarmigan" were seen flying in a southwesterly direction along the shore of Great Slave Lake.

YELLOWKNIFE BAY, NORTHWEST TERRITORIES:

In the early winter of 1974-75, several flocks each of about seven birds, were seen heading out over Great Slave Lake in a southerly direction.

It is possible that observers not particularly interested in the exact direction of the flights (as Mr. McDonald had become as a result of his observations) recorded only their general direction in the case of the reports from Creighton and Yellowknife Bay. These flights might in fact have conformed to the general northeast-southwest pattern.

The direction of migratory movements of ptarmigan observed in the area under consideration is apparently related to climatic and geographical factors. Mid-winter isotherms in this area lie further north in its western than in its eastern portion.¹³ Ptarmigan moving southwesterly in the fall will therefore reach a slightly milder climate sooner than if they travel in any other direction.

Since the southern boundary of the tundra north of the area under consideration slants farther south as one proceeds eastward (see Fig. 1), ptarmigan moving toward the breeding zone in late winter will have to traverse less boreal forest if they fly on a northeasterly rather than a northerly course.

Predation on ptarmigan

Various avian predators have been observed taking Willow Ptarmigan.⁵ To those previously listed may be added the report of a Short-eared Owl killing a full grown ptarmigan in one of the questionnaire replies. As kills by mammalian predators, though no doubt frequent, are rarely observed, a Short-tailed Weasel killing an adult ptarmigan and a Fisher carrying one in its mouth, which were reported in questionnaire replies, are noteworthy.



Ptarmigan tracks near Uranium City, Saskatchewan.
E. Otto Höhn

Discussion

Two of the items mentioned above warrant further consideration. The passage of many birds through the taiga to its southern edge while others winter farther north makes for a general distribution within the boreal forest. Willow buds and twiglets and to a lesser extent those of birch are the main winter food of Willow Ptarmigan. In the predominantly coniferous boreal forest, birches are scarce and willows are generally restricted to lake and river margins. A wide winter dispersion of ptarmigan ensures full utilisation of the limited food resources of the area.

A partial segregation of the sexes in winter, with males predominating on or near breeding areas, seems to be characteristic of all ptarmigan. As already mentioned, it was demonstrated in Alaskan Willow and Rock Ptarmigan, it is shown in data on Finnish Willow Ptarmigan, and it was demonstrated in the relatively sedentary White-tailed Ptarmigan.^{11 9 4} These studies further showed that banded

subadults wintered farther from breeding areas than adults of the same sex. Data on Willow Ptarmigan in Alaska show a similar effect of age on winter distribution.^{6 14}

As few birds of known age were collected in the area considered here, age as a factor in winter distribution could not be studied, but in view of the findings cited, its effect is likely to have been similar to that observed elsewhere.

Weeden, in discussing the value of the sex difference in ptarmigan migratory patterns, suggests that departure of part of the population in the fall may be necessitated by food shortage in winter on the breeding grounds.¹¹ This seems particularly pertinent since the tundra, once it is snow-covered, is unlikely to be able to support as many ptarmigan as occur there in the summer.

The greater size of male over female Willow Ptarmigan (average weights of the two sexes differ by about 10%) with



Hen Willow Ptarmigan on nest, Scammon Bay, Alaska.

E. Otto Höhn

the associated greater cold tolerance probably favours the survival of males on the tundra as compared to females. There is some evidence of autumnal androgen secretion in male Willow Ptarmigan. Display calls and occasional territorial behaviour were observed in these birds in Alaska by Weeden, who noted no sexual behaviour in hens at this time.¹² This androgen-dependent territoriality would strengthen the attachment of males to the breeding areas and tend to inhibit their departure from it in the fall or reduce the distance to which they move away from it.

Lastly, adult males would be likely to arrive on the breeding grounds in the spring before younger males which (on the basis of the findings of Hoffman and Braun) have wintered farther away.⁴

Acknowledgements

I wish to thank the Superintendent of Game, Government of the Northwest Territories, and Directors of the Fish and Wildlife Divisions of the Governments of Alberta, Saskatchewan and Manitoba, for distribution of my questionnaires and above all the 23 game biologists, game wardens, conservation officers and individuals who responded to my questionnaires.

I am also obliged to those who supplied me with data on sexed ptarmigan in a number of museum collections.

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BARROW'S GOLDENEYE IN SASKATCHEWAN

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On Monday 10 October 1983 I visited the south end of Blackstrap Lake south of Saskatoon to see if any new water birds were on the lake. A cold front had blown in from the northwest overnight and it was cool with short driving showers which continued to blow through.

About 450 m north along the east bank a small flock of goldeneye moved away from the shore. Two of the birds were adult males and the other five were females or immatures. The upperparts of one of the males were markedly darker than those of the other. Study with a spotting scope confirmed that this male and at least one of the females were Barrow's Goldeneye.

The male was in full adult plumage with the inverted white facial comma, the extensive black upperparts with white port-holes, the black of the back drooping down over the shoulder in a crescent shape, and the rather flat-headed profile. The drake seemed alarmed as it began craning its neck and swimming farther out into the lake. The female was very similar to the nearby female Common Goldeneye except that the bill was entirely yellow-orange in colour.

I took a hasty photograph of the drake, and almost immediately the flock spooked and flew to the north several hundred meters. I called in a report on the Saskatoon Rare Bird Alert and about an hour later was joined at Blackstrap by Al Smith and Stan Shadick who also saw these goldeneye. We were, however unable to approach the birds any closer than about 150-200 m before they became agitated and flew away again.

The birds were not seen again for about 3 weeks, but in the last few days of October and the first week of November there were several reports of up to three Barrow's Goldeneye at Blackstrap as well as reports of single drakes on Last Mountain Lake at Regina Beach 28 and 30 October by B. Luterbach and R. Kreba, and Broderick Reservoir near Outlook on 8-9 November by A.R. Smith. Another 2 weeks passed before my final sighting at Blackstrap Lake. On 18 November 1983 Al Smith and I were on the west side of the lake in the Shields Townsite when we found three Barrow's Goldeneye feeding in the shallows: a drake, a yellow-billed female and a dark-billed bird I assumed to be an immature Barrow's Goldeneye. I photographed the male again, but as soon as they were approached the three birds flew off and were not seen again. Five days later the lake was completely frozen over.

The photographs provide documentation of this species' occurrence in Saskatchewan. The recently revised provincial checklist showed Barrow's Goldeneye as a hypothetical species, known from sight records but never photographed or collected. Houston summarized the unconfirmed records to 1 January 1981 and there were four: an adult male 6 April at Morse, an adult male shot but not preserved at Pasqua Lake 12 October 1964, a male 9 November 1975 north of Semans, and a male at Eastend 5-6 April 1980.² Two subsequent sightings have been reported: 25 October 1981 Bob Godwin, Kathy Meeres and D. Paulson saw an adult male at Blackstrap and 24 October 1982 Bob Luterbach reported a male at Regina Beach.^{4 1}



Male Barrow's Goldeneye

Christopher Esco

In Canada Barrow's Goldeneye commonly breeds throughout the Rocky Mountains as well as in Labrador. It winters along both coasts, but is also recorded widely but sporadically in the interior of the country during migration. The limited number of sightings to date in Saskatchewan may be partly due to limited birding activity in the province at the appropriate time of year. The intensive duck-watching during the fall of 1983, especially at Blackstrap Lake may have only recorded what may be an uncommon but regular migrant.

¹HARRIS, W.C. 1983. Prairie Provinces Region, the autumn migration August 1 - November 30, 1982. *Am. Birds* 37(2): 192-194.

²HOUSTON, C.S., M.I. HOUSTON and J.B. GOLLOP. 1981. Saskatchewan bird species — hypothetical and rejected. *Blue Jay* 39(4):196-201.

³KREBA, R. 1983. Field checklist of Saskatchewan birds, sixth edition, June 1983. Museum of Nat. Hist., Sask. Culture & Recreation.

⁴O'NEIL, P. 1981. Saskatoon Field Notes #39 (Vol. 10, No. 3) August 1 - November 30, 1981. Saskatoon Nat. Hist. Soc.

WANTED: SIGHTINGS OF PEREGRINE FALCONS IN SASKATCHEWAN. Ad peregrine falcons were seen on the south Saskatchewan River system at a potential nesting area this spring. Substantial numbers of peregrines have been released in both the city of Saskatoon and the Qu'Appelle Valley and we feel this sighting may indicate that a few breeding pairs of peregrines have established themselves. Please report exact location of a sighting to: L.W. Oliphant, Department of Vet. Anatomy, University of Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0.

FIRST RECORD OF THE KING EIDER IN SASKATCHEWAN

ALAN R. SMITH, 614 Lansdowne Avenue, Saskatoon, Saskatchewan. S7N 1E3

Saskatchewan and Alberta are the only landlocked provinces in Canada, therefore occurrences of seafaring birds in either of these provinces might be considered unusual. It is so unusual for the King Eider that it has happened only once in each province: on 4 November 1894 an immature male was shot near Calgary, Alberta. It was accompanied by another bird that may have been an adult male.⁴ Eighty-nine years later a female-like bird appeared at Blackstrap Lake, Saskatchewan.

On 26 October 1983 I was birding at the south end of Blackstrap Lake. One of the first birds I saw was a large brown duck which, upon closer examination, I was astonished to discover was a King Eider. The identification was based partially on the standard field marks: the pattern of feathering at the base of the bill, and the profile. The

clinker, however, was the head pattern: a conspicuous light line extended from the eye, down the neck, and around the nape in a ghostly suggestion of the head pattern of the adult male. (While many of the North American field guides show this field mark, none of the guides mention it in the text.)

Because I have seen both Common and King Eiders of both sexes in the Canadian Arctic, and because I saw this bird as close as 5 m, I was convinced my identification was correct. But I also knew a specimen or photograph was necessary to place the species on the Saskatchewan list. I immediately phoned Bernie Gollop and Chris Escott in Saskatoon and asked them to bring their cameras along to provide photographic documentation. By the end of the day Brian Johns, Jim



Immature male King Eider at Blackstrap Lake, Saskatchewan.

Chris Escott

Wedgwood, Gollop and Escott of Saskatoon, and Guy and Robert Wapple of Biggar had seen the bird. Over the next 3 days the bird was seen by several more observers including Brenda Dale of Saskatoon, Chris Adam, Frank Brazier, Robert Kreba and John Triffo of Regina. Gollop, Johns, Escott and Kreba obtained photographs showing one or more of the diagnostic features. The bird was not seen again until 7 November when it reappeared at the Thode Townsite about 7 km northeast of the original sighting. It remained there until the final sighting on 18 November. Five days later Blackstrap Lake was frozen.

Although the photographs prove that the bird was a King Eider, I was initially confused as to its age and sex. I later concluded that because the base of the upper mandible was orange it was a first-year immature male.^{1 3} It will be another two years before this bird assumes the full adult male plumage.¹

It is difficult to explain the occurrence of the King Eider on the prairies. The species breeds in the arctic, migrates coastally, and spends the winter at sea off the Aleutians, southwest Greenland or Atlantic Canada.^{2 3}

Indeed the nearest point of regular occurrence is 1000 km from Blackstrap Lake on the Hudson Bay Coast of Manitoba.² In referring to inland records of the King Eider in North America, Palmer speculated that if lingering birds were forced to move (presumably by inclement weather), they might move more directly south; this would take them into the interior.³ Whatever the explanation, let us hope we do not have to wait another 89 years for the next King Eider to appear!

¹CRAMP, STANLEY, and K.E.L. SIMMONS, eds. 1977. Handbook of the birds of Europe, the Middle East, and North Africa: the birds of the Western Palearctic. Vol 1: Ostrich to Ducks. Oxford University Press, Oxford. 722 pp.

²GODFREY, W. EARL. 1966. The birds of Canada. Nat. Mus. Canada Bull. 203. Ottawa. 428 pp.

³PALMER, RALPH S., ed. 1975. Handbook of North American birds. Vol. 3: Waterfowl (Part 2). Yale University Press, New Haven. 560 pp.

⁴SALT, W. RAY, and JIM R. SALT. 1976. The birds of Alberta. Hurtig Publishers, Edmonton. 498 pp.

INTERNATIONAL ORNITHOLOGICAL CONGRESS

The XIX International Ornithological Congress will take place in Ottawa, Canada from 22 to 29 June 1986. Prof Dr. Klaus Immelmann (West Germany) is President and Dr. Henri Ouellet (Canada) is Secretary General. The programme is being planned by an international Scientific Programme Committee chaired by Professor J. Bruce Falls (Canada). The programme will include plenary lectures, symposia, contributed papers (spoken and posters), and films. There will be a mid-congress free day. Pre and post-congress excursions and workshops are planned in various interesting ornithological regions of Canada.

Information and requests for application forms should be addressed to: Dr. Henri Ouellet, Secretary General, XIX Congressus Internationalis Ornithologicus, National Museum of Natural Sciences, Ottawa, Ontario, Canada. K1A 0M6

CALGARY AREA BLUEBIRD TRAILS

DON STILES, 20 Lake Wapta Rise S.E., Calgary, Alberta. T2J 2M9

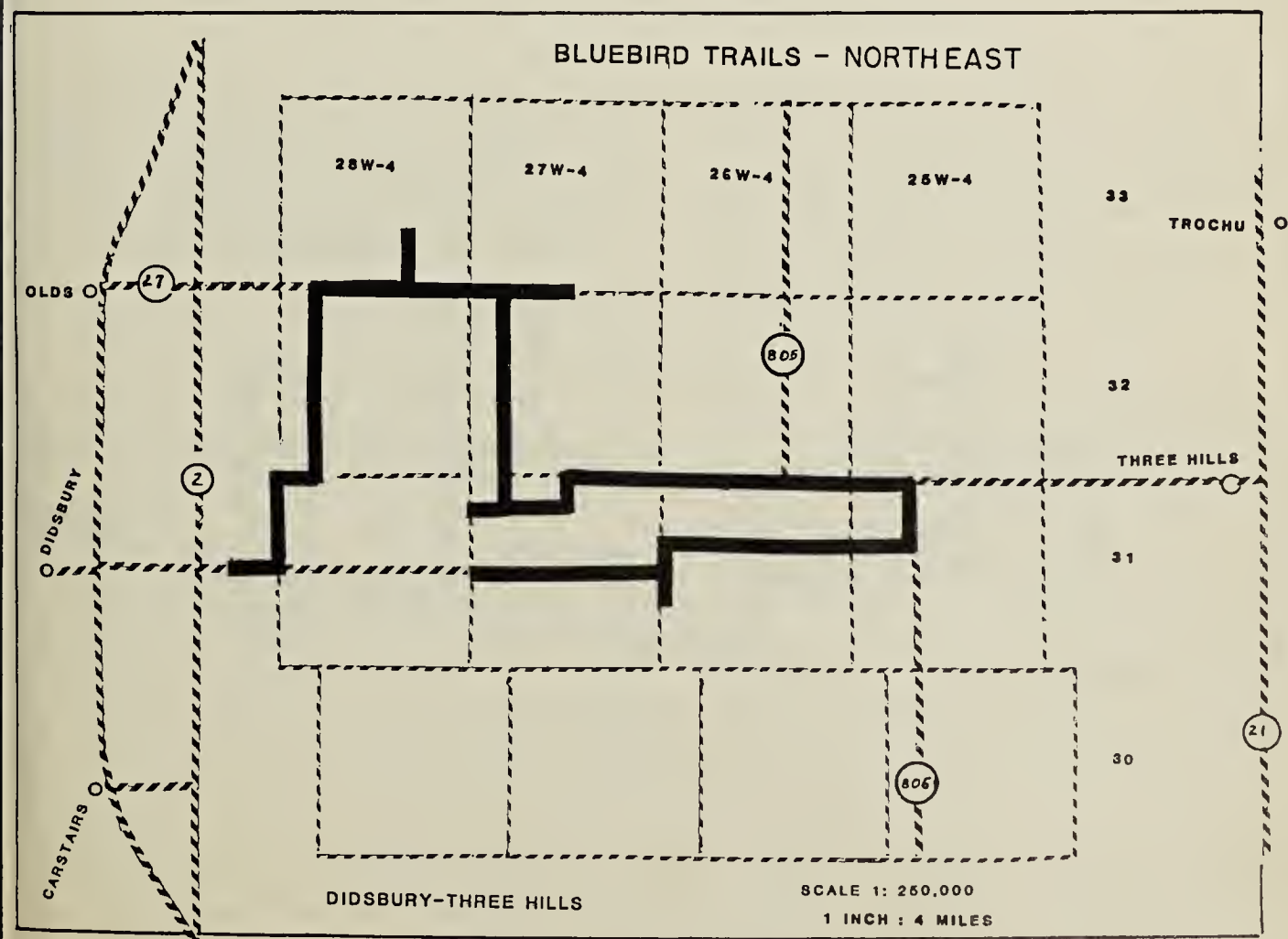
The following article describes the results from the 5th year of monitoring Calgary area Bluebird trails by members of the Calgary Field Naturalists' Society. Three maps are shown, courtesy of George Blundun, which display the Calgary area trails in three directions from Calgary: southwest, northwest and northeast. Two sections are not shown that did not fit on the page in the format of the maps constructed. Ray Morck's Hartell loop begins 6 mi. south of Black Diamond and Nancy Murray's Seebe to Canmore section is on #1 Highway. There are no bluebird trails southeast of Calgary because it is open prairie habitat where bluebirds do not nest.

Calgary area trails were increased this year to 817 boxes on 469 mi. of line

and fledged approximately 1140 Mountain Bluebirds and 2260 Tree Swallows. Numbers of Mountain Bluebird nests (includes second broods) were up over last year, with dramatic increases in Blake Stillings' (northwest) trail (82 to 141 nests) and Don Stiles' East Didsbury (northeast) trail (33 to 47 nests). Both of these trails had fewer Tree Swallow nests (205 to 186 and 70 to 53, respectively).

Not all trails reported increases in bluebird nests; others were equal or slightly down. One possible explanation is local rainstorms that adversely affected nesting in some areas.

George Blundun gave a 6-year summary for his Priddis - Millarville section of 35 to 38 nest boxes (see Table 2).



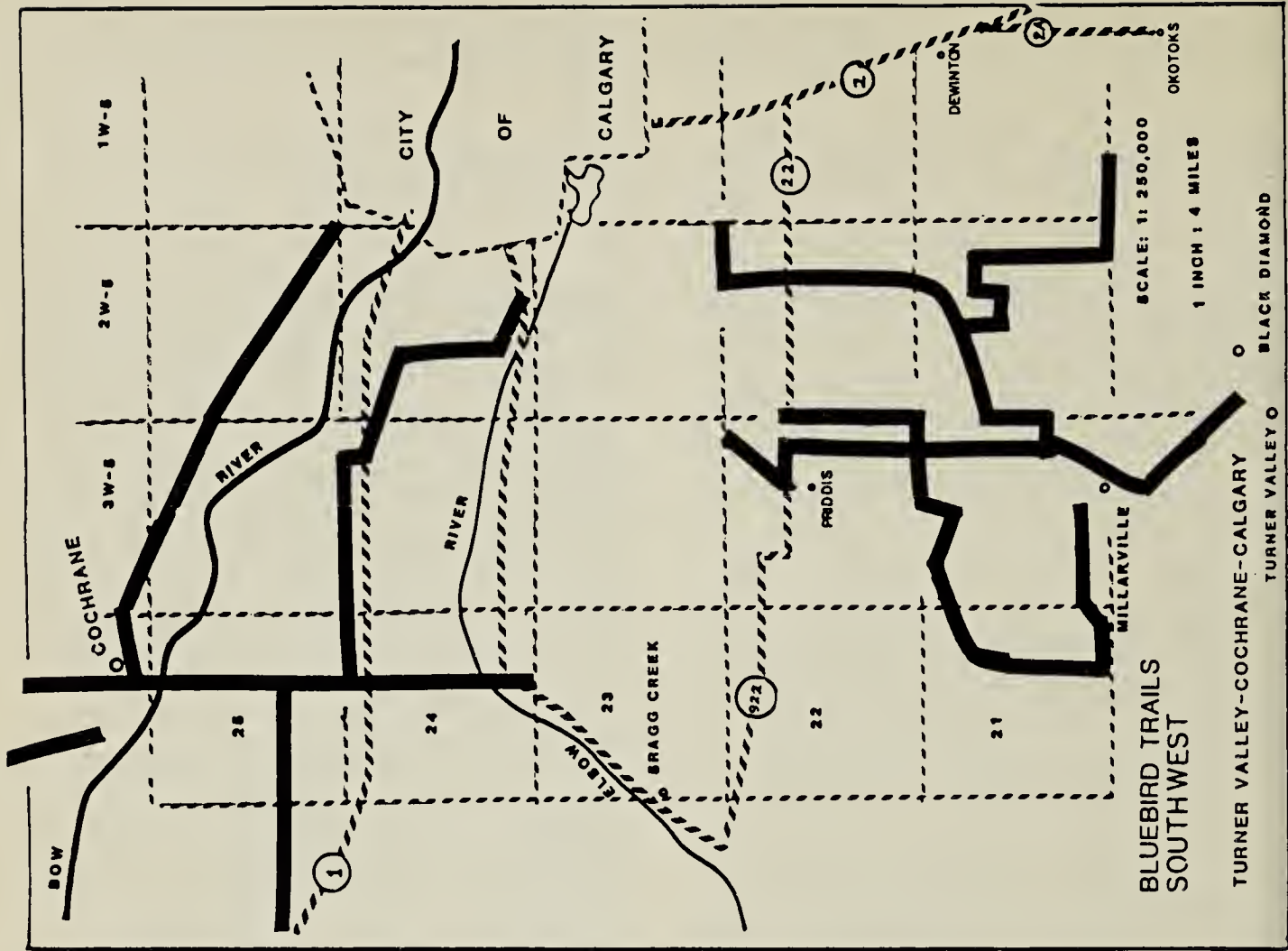
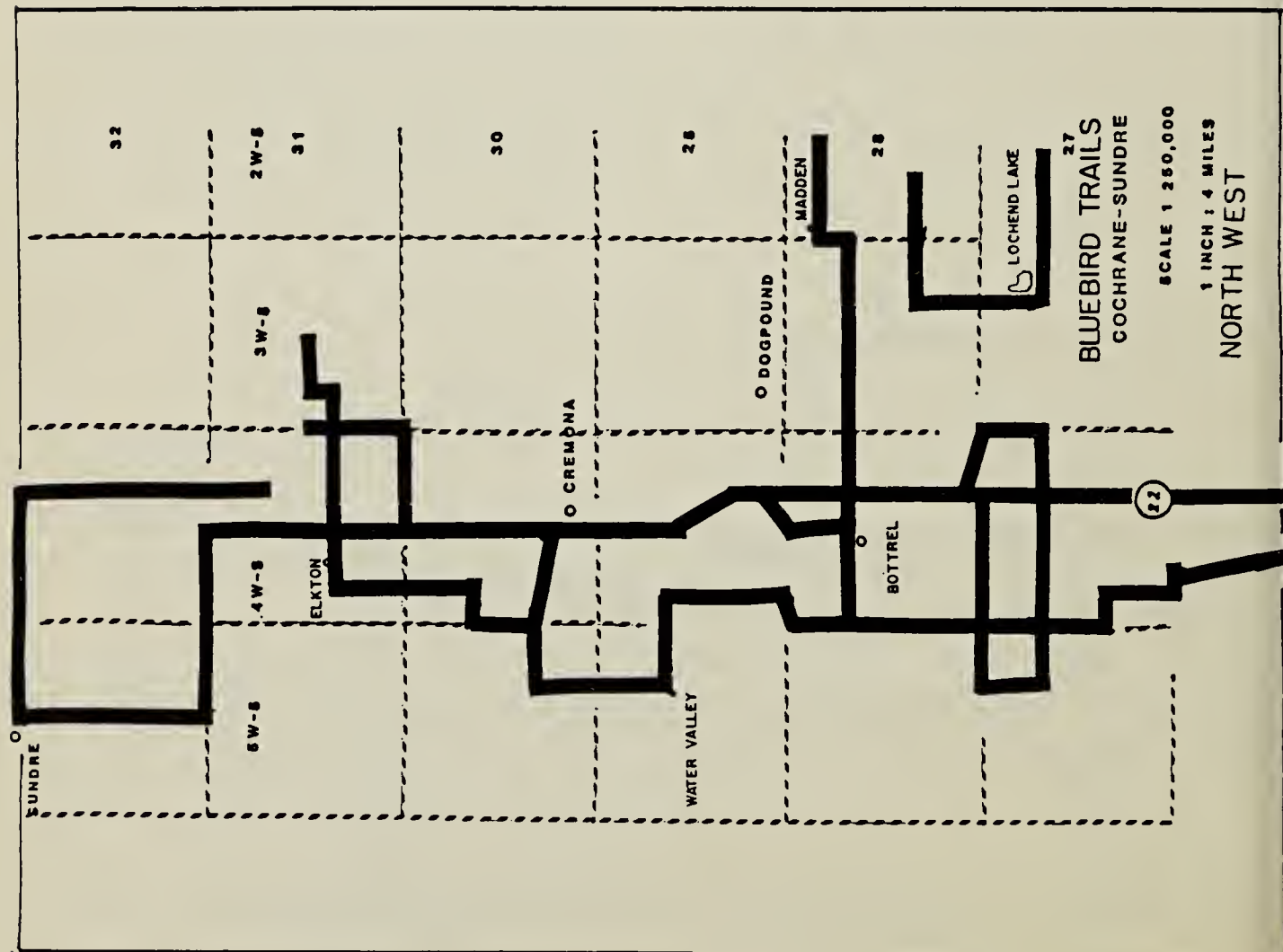


Table 1. CALGARY AREA NESTBOX RESULTS — 1983

	Blake				Seebe-	
	Southwest	Stillings	Northwest	Northeast	Canmore	Totals
No. of Boxes	223	301	151	103	39	817
Miles of Line	121	168	94	65	21	469
Mountain Bluebird						
No. Nests	50	141	37	47	2	277
% Successful	76	91	92e*	66	100	84e
No. Eggs	244	719	203	250	13	1429
No. Young Fledged	183	641	150e	156	13	1143e
Clutch Size	4.88	5.10	5.49	5.32	6.5	5.16
Y/Successful N	4.82	5.01	4.41e	5.03	6.5	4.90e
Banded	19		87	30		136
Tree Swallow						
No. Nests	145	186	94	53	5	483
% Successful	85	98	81e	79	80	88e
No. Eggs	777	1104	513	294	29	2717
No. Young Fledged	648	1018	372e	204	22	2264e
Clutch Size	5.36	5.94	5.46	5.55	5.8	5.62
Y/Successful N	5.27	5.59	4.89e	4.86	5.5	5.32e
Banded	32		113	91		236
House Sparrow	10	12	6	13	0	41
House Wren	14	3	3	4	0	24
Multiple Use	21	27	9	18	0	75
Vandalized	11	25	5	2	0	43
Boxes Not Used	13	2	8	4	28	55

* e = estimated

On this trail every time the number of bluebird nests increased the number of Tree Swallows decreased and vice versa. This is true in almost all cases.

Eleven new boxes in the Lochend Lake area plus five put up by someone unknown had only swallows but are within 4 mi. of trail with bluebirds and are in good habitat.

New Bluebirds

Bluebird range extension was reported by Jim Minty 4 mi. south and 1

mi. west of Strathmore where boxes only had swallows and House Sparrows previously. The nearest known bluebirds are at Rosebud 30 mi. north-east, although some may nest along the Bow River 12 mi. south.

Five new houses on the west Dewinton trail had four bluebird nests and an extension of the West Crossfield trail produced four bluebird nests in an area where in the past 3 years there were only swallows.

Table 2. PRIDDIS-MILLARVILLE TRAIL RESULTS OVER 6 YEARS

# of Nests	Year:					
	1978	1979	1980	1981	1982	1983
Bluebirds (first broods only)	18	21	10	11	17	19
Tree Swallows	11	12	23	22	17	13



Tree Swallow by-passing wing guards.

Kay Morck

Swallow Wing Guards

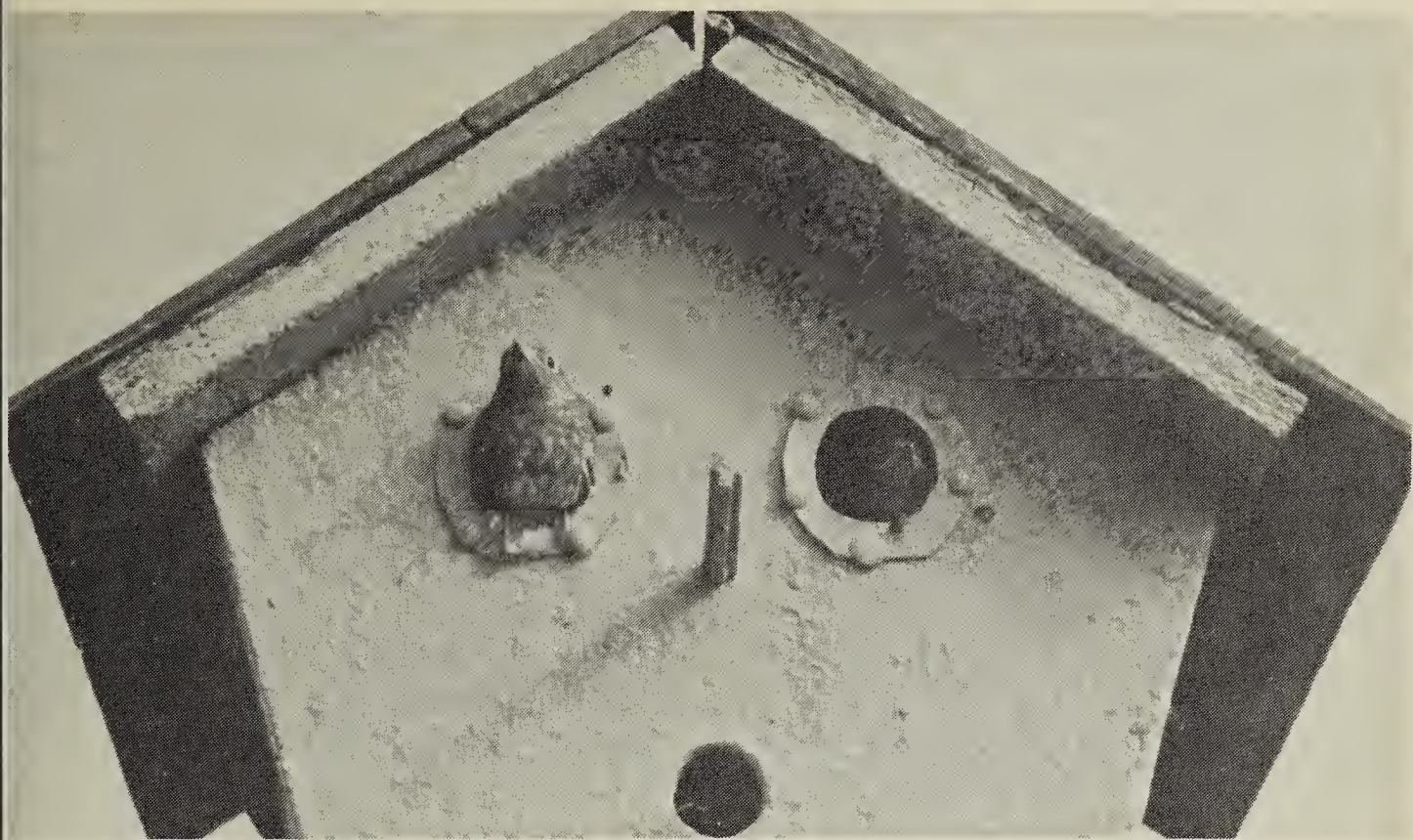
In an experimental project of the North American Bluebird Society plywood strips 1.75" wide were attached to the fronts of nest boxes 2.5" apart. These were supposed to impede the Tree Swallow who has to keep fluttering its wings right up to landing whereas the bluebird is supposed to be able to fold its wings before reaching the hole to land.

Kay Morck tried one of these but Tree Swallows still used the box. She photographed a Tree Swallow entering the nest by outwitting the guard. Stiles tried two wing guards; bluebirds nested where one was and later swallows tried unsuccessfully. In the second box bluebirds only fledged one of five young; the others died when half grown. The wing guards were placed on a House Sparrow - prone box with an extra 1.5" plywood over the hole. Sparrows still used the box. (Monitors now usually remove nest boxes repeatedly used by sparrows.)

The North American Bluebird Society reported only about 50% success with the swallow wing guards.

Highlights

Mike Stanfield near Priddis reported: "We have bluebirds nesting in a pole box on the edge of our front lawn every year; this year the 26th June was the day when five fledglings left the nest ... Today (June 28) a dead mature male was found deposited at the back door by a cat. In the evening there was a terrific chasing and pecking and fluttering going on in the garden by the box, a blue blurr of wings and feathers, only a few feet away from where I stood. After some fifteen minutes I got tired and left, but these birds kept right on at it until they became quite exhausted, fluttering down on the grass, breathless. I was watching from the window for another 15 minutes until it was dusk. I finally determined that two mature females were fighting over one mature male. The male and one female would go into the box, and then out again; he would flutter his wings at her, then chase the other one away, then all three would fight, spiralling round each other and falling repeatedly down to the grass, rather like butterflies spiral around. No second brood occurred in spite of all this!"



Bluebirds ready to fledge.

Mike Stanfield

From Blake Stillings' notes we have the following:

"Box #71 on Highway 22.

June 9, 1983. 2 live, 2 dead young about $\frac{1}{2}$ grown in the box. BB here but appeared to be agitated. Young appeared to have been savaged probably by another bird but I saw no predator.

June 12, 1983. The remaining bluebird young are now dead in box and appear to have been pecked to death. Two Tree Swallows are flying around here. Did they kill the young birds? I cleaned out the box.

July 15, 1983. Tree Swallows did not build but bluebirds did and once again nest was broken up, this time broken egg shells and broken eggs in box. Did not see any other birds. I now think Tree Swallows did not kill young birds because they did not nest in box as they could be expected to do. This box sat on the edge of willow thicket. Could wren be responsible? I moved box 50 feet, north to an open location.

"Box #23 Westbrook Loop.

June 8, 1983. Bluebirds, 6 young just hatched.

June 27, 1983. 5 live young bluebirds and 1 dead young in nest. Birds are ready to fly but very distressed. Bedraggled with excrement and very wet. Female bluebird at site. I replaced top and left then came back an hour later and re-examined box. Now only 3 young remained. I removed the dead fledgling and again closed box. Did the missing 2 fly? I watched for $\frac{1}{2}$ hour and during this time female bluebirds made repeated visits to box with food which she left inside. Did not see any fledglings outside nor did hen fly to any other location. Did not see any predator.

July 3, 1983. Three young bluebirds died in box huddled together facing entry hole. Very bedraggled. I cleaned. What happened here when young birds were ready to fly and 20 days old? Box was destroyed this fall by vandal's shotgun."

Ray Woods reported an instance of some missing young. "In one instance this summer 6 young were counted in a nest on June 12th. These young were brand new and too young to band. On returning a week later — June 19th — only 3 young were in the nest! Could the other three have been thrown out by a parent? If so, how often does this happen, I wonder?"

Bryan Shantz of Ellis Bird Farm northeast of Red Deer joined us for our annual monitors' reporting evening. He and Hazel monitor about 500 boxes, and band bluebirds wherever possible. He reports 27% of adult males and 37% of adult females return, usually within 1 mi. of their nesting site, but only 5% of young return the next year. He reported that driving rains caused the loss of one third of the Tree Swallows and some bluebirds with young aged 3 to 10 days at risk. Rains may explain in part variations between one monitor and the next, as several Calgary area monitors reported at least some dead young. Bryan reported tht Mountain Bluebirds take 14 days to incubate, and 20 days to fledge, but a shorter time, say 17 days if disturbed.

Nancy Murray reported four successful Mountain Chickadee nests. These may become the dominant species on her trail. Blake Stillings reported a successful Boreal Chickadee nesting and Bryan Shantz two Black-capped Chickadee nests.

Banding

A total of 136 Mountain Bluebirds (26 adults plus 110 young) and 236 Tree Swallows (53 adults plus 183

young) were banded by Don, Philip and Andrew Stiles and Ray and Agnes Woods.

Band recoveries from 1982 were as follows:

- 2 adult bluebirds recovered of 16 banded (12.5%)
- 6 adult Tree Swallows recovered of 47 banded (12.8%)
- 1 Tree Swallow young of 131 banded (0.08%).

The year-old Tree Swallow was one of a double brood of 12 banded in 1982 in box #143 East Didsbury Trail (Blue Jay 40(4):205-206). Recoveries of the adult bluebirds were 0.5 and 1 mi. from their banding sites.

Two adult Tree Swallows banded in 1981 were recovered. Of the eight Tree Swallows recaptured two were in the same house, two moved 0.5 mi., two moved 1 mi., one moved 2.5 mi. and one moved 6 mi. from their banding sites, indicating that most birds return from migration to nest near their previous nesting site.

Two adult Tree Swallows were captured together from one nest and banded. On three occasions adults and young were banded in the same nest on the same date. Usually adults do not stay with young large enough to band (over about 6 days old).

Don Stiles banded two different females in the same nest for first and second broods of bluebirds, whereas Ray Woods found two occasions where the same bluebird female was recaptured in the same nest with a second brood.

OUT OF PRINT SNHSS.P. #5

Special Publication No. 5 Birds of Lake Athabasca by R.W. Nero is out of print.

ERRATA

FIRST SASKATCHEWAN RECORD OF CHANNEL CATFISH. Edward L. Dean. December 1983 Blue Jay, page 183. Inadvertently the words "**IN THE QU'APPELLE RIVER**" were deleted from the title of this article.

AN UNUSUAL STORY — RECORD 20-YEAR LONGEVITY OF FERRUGINOUS HAWK

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8

Birds I have banded of five species (Black-crowned Night Heron, White-winged Scoter, Great Horned Owl, Black-billed Magpie, Bohemian Wax-wing) have held, for varying lengths of time, the North American records for longevity. For this reason, recent compilations of longevity records from the United States Bird Banding Laboratory in Laurel, Maryland, begun in 1982, have been scanned with great interest.

From official banding records, the oldest Ferruginous Hawk is one banded by W. Ray Salt in Rosebud, Alberta on 23 June 1935 and shot at Carbon, Alberta on 5 May 1951.² This item jogged my memory, and I looked up a brief note by Hoyes Lloyd in the *Canadian Field-Naturalist*, titled "Twenty year old Ferruginous Rough-legged Hawk," the gist of which was as follows:

"A leather collar to which was fastened a bell and a name plate bearing a return address and the date was attached to the neck of a Ferruginous Rough-legged Hawk at Clayton, New Mexico, on January 7, 1917. Approximately 20 years later, presumably during the spring of 1937, this hawk was found dead at Strongfield, Saskatchewan. The bird is reported to have wintered at Clayton during the years of 1918 and 1919, and to have nested in the same tree at Strongfield for the last 4 or 5 years prior to its death. The collar, bell and tag were returned to the person who placed them on the hawk and he positively identified them, and supplied the information upon which this item is based."³

This is probably the individual cited as 19 years of age in *Eagles, Hawks and Falcons of the World*, p. 134, but the record is somewhat unsatisfactory since exact dates of finding of the bird, the name of the "bander" and the name of the finder were not given anywhere.¹ I wondered whether such information might yet be available.

My hope was that the finding of a bird of this age, with a bell, might be sufficiently unusual that someone in the Strongfield area would still remember it 46 years later. I telephoned the Follick family, on whose farm I had once banded young Great Horned Owls. Ken Follick made enquiries and phoned back the next day to report that neighbors had identified the finder as Orville Amrud, now living in Davidson. I contacted Orvald, who filled me in on many details. While checking cattle on a large patch of pasture, 5 miles east and 1 1/4 miles south of Strongfield one summer in the 1930s, he noted a very large hawk dead on the ground. When he kicked it he noted a bell around its neck. The hawk was familiar to Amrud, for the bell had been visible while it fed young at its nest for the preceding 5 summers. On closer inspection, he found a name plate attached with a key ring, the whole fastened with a leather strap. Amrud then loaned me a yellowing clipping from an unnamed and undated New Mexico newspaper, titled "20 Years Ago." The pertinent portions read as follows:

"W.V. Shouse, wholesale and retail oil dealer of Booker has a number of hobbies, principal among



Orvald Amrud about 1937.

these is studying the migration of wild fowls and collecting Indian relics. Mr. Shouse's interest in wild fowls has recently brought inquiries from the United States government, also Canada, as a bird he marked twenty years ago was recently found in that section.

"Back in 1917 Mr. Shouse and his family lived on a homestead ten miles from Clayton, N.M. While there Mr. Shouse had some trouble with coyotes and he set traps. On Jan. 7, 1917, he caught a large, fullgrown prairie hawk in one of these traps. The hawk, uninjured, was turned loose, but not until Mr. Shouse had put a leather collar around its neck to which a small metal bell, measuring approximately 1 1/4 by 1 1/2 inches was attached. On a key ring name plate attached to the collar he stamped the following:

"Write to W.V. Shouse, Jan. 7, 1917. Clayton, N.M.

"For two years, Mr. Shouse continued to live on the New Mexico land, moving away in 1919 when it was proven up. During that time each winter he would see the belled hawk. It always returned. After he moved, the hawk was almost forgotten until recently he learned it had been found dead in Canada and the bell collar and tag mailed to him — more than twenty years after he had placed it on the bird.

"The hawk, which is described as having been a large bird with a spread of four feet was found by an eighteen-year-old Norwegian boy, Orvald Amrud, living near Strongfield, Saskatchewan, Canada. The bird and its mate had been nesting in the same tree each summer for the past five years, the boy wrote Mr. Shouse. As no wounds were discernable it was supposed that it died of old age. Amrud wrote to Mr. Shouse at the Clayton address as given on the tag and when the letter was returned to him, made inquiry of the Clayton postmaster, who located Mr. Shouse.

"Inquiries have come to Mr. Shouse regarding date and locality of marking the bird and where recovered, from the U.S. Department of Agriculture, Bureau of Biological Survey. A record will be made on the bird and placed in the miscellaneous files of the department. The National Parks Bureau, Department of Mines and Resources, Ottawa, Ontario, Canada is also interested in obtaining a record on the hawk."

Documentation as to at least the year of the finding was still necessary. From my atlas I learned that Clayton had over a thousand inhabitants, large enough to have a newspaper, though I did not know its name. Then I phoned the area code for New Mexico, 505 followed by the free number 555-1212. I

was connected with an unusually helpful information operator. After reading down the list of enterprizes in Clayton, none of which were "Times," "Herald," "Eagle" or anything that might be a newspaper's name, she thoughtfully added that Clayton was in Union County, and triumphantly gave me the name and phone number of the *Union County Leader*.

Too frugal to telephone, I wrote to the newspaper and eventually got a reply from D. Ray Blakeley, their helpful reporter. Ray replied: "Wouldn't you know . . . the 1937 bound volume of this newspaper was lost some years ago, having been borrowed and then left in a taxi cab in Amarillo, Texas." However, the *Leader* also owned the files of their one-time rival, the *Clayton News*. In the 14 April 1937 edition of that newspaper Ray found the following brief item:

"How long does a hawk live and how far does it travel in a life span. Postmaster A.L. England is asking that question this week following a letter from Canada regarding a hawk killed there last year. The writer claims he killed a hawk that carried a bell with the name W.V. Shouse, Clayton, N.M. and the date Jan. 7, 1917 scratched on it. He had written Shouse several times in Clayton and the letters had been returned unclaimed. He then wrote Mr. England who was able to find the present address of Mr. Shouse in Texas and forward the letter to him. A thousand miles of travel and 19 years of life; quite a record."

The identification of the hawk was correctly made by Hoyes Lloyd in 1937. Amrud was impressed by the large size of the hawk and the large size of the nest, in comparison with other "gopher hawks" in his locality. Although the body of the Ferruginous Hawk is a great deal larger than the Swainson's Hawk, each have a length of outstretched wings of more than 4 feet, Swainson's 48 to 56 inches and

Ferruginous 54 to 56.5 inches.⁴ Red-tailed Hawks would then have been much the rarest of the 3 buteo species, not expected to nest near Strongfield, and the fact of wintering in New Mexico makes Ferruginous Hawk the overwhelming choice. Although neither the "bander" nor the finder were experts in raptor identification, all evidence points to the Ferruginous Hawk. This individual clearly holds the "world's record" for Ferruginous longevity. It must have been at least 6 months old when the bell was attached in January 1917. When it died, presumably of natural causes (old age) in the summer of 1936, it was at least 20 years old.

It is unlikely that further information will come to light, but since Shouse by 1937 lived in Booker, in the adjacent "Panhandle" of Texas, I have also written to the *Perryton Herald* in Perryton, Texas, to see whether they might have published a slightly different version of the same story.

It seems unfortunate that Hoyes Lloyd did not provide more documentation when he published his little note, but had he done so he would have denied me a sleuthing experience that put me in contact with nice and unusually helpful people. It's been fun.

¹BROWN, L. and D. AMADON. 1968. Eagles, Hawks and Falcons of the World. New York: McGraw-Hill. 2 vols.

²CLAPP, R.B., M.K. KLIMKIEWICZ and J.M. KENNARD. 1982. Longevity Records of North American Birds: Gaviidae Through Alcidae. *J Field Ornithol* 53:81-124.

³LLOYD, H. 1937. Twenty Year Old Ferruginous Rough-legged Hawk. *Canadian Field-Naturalist* 51:137.

⁴ROBERTS, T.S. 1955. A Manual for the Identification of the Birds of Minnesota and Neighboring States. Minneapolis: University of Minnesota Press.

BIRDS OF GRAZED AND UNGRAZED GRASSLANDS IN SASKATCHEWAN

BRENDA C. DALE, 2130 Cumberland Avenue, Saskatoon, Saskatchewan. S7J 1Z3

Densities of song birds breeding on grazed and ungrazed grasslands at the north end of Last Mountain Lake, Saskatchewan, were determined in 1980 and 1981 as part of a study of bird habitat relationships.³ Species using the area, but breeding in other habitats, and non-passerine breeding species were also noted but their densities were not determined.

Two plots (see Table 1 for plot descriptions) in the Canadian Wildlife Service Wildlife Management Unit at Last Mountain Lake and one in the adjacent Wreford Community Pasture were censused in May, June and July of 1980 using the mapping method.¹² In 1981 four plots in the Management Unit were censused in May and June with the mapping method modified to allow prolonged observation or flushing of individual birds as encountered.^{9 17}

Densities of breeding passerine birds in 1980 and 1981 are presented in Table 2. The most common breeding species were Horned Lark (with a 2-year average of 25 pairs/100 ha), Sprague's Pipit (46 pr/100ha), Clay-colored Sparrow (30 pr/100ha), Savannah Sparrow (52 pr/100 ha), Baird's Sparrow (39 pr/100 ha), Chestnut-collared Longspur (31 pr/100 ha), Western Meadowlark (16 pr/100 ha) and Brown-headed Cowbird (21 pr/100 ha). Horned Larks and Chestnut-collared Longspurs occurred only in grazed plots. Clay-colored Sparrows appeared in greater numbers in grazed situations. Western Meadowlark and Brown-headed Cowbird numbers showed no response to grazing. Sprague's Pipit numbers declined with grazing and Savannah and Baird's

Sparrows were virtually eliminated by grazing during the dry summers of 1980 and 1981. In 1982, after a moist winter and spring, the plots at Last Mountain Lake supported growths of grass that appeared to be about twice the height of dead stems from previous seasons. Savannah Sparrows were heard giving territorial song on one of the grazed plots (1B) and Baird's were singing on both the grazed plots (1B and 3) when the study area was visited 3 July 1982.

The species encountered in this study were consistent with previous surveys of Canadian grassland avifauna.^{1 10 11 16 18} Some different or additional species were seen in the other studies: Brewer's Sparrow⁸, Lark Bunting,^{1 8 16} Grasshopper Sparrow,⁸ and McCown's Longspur.¹⁰ Last Mountain Lake is outside the normal range of all these species although single Lark Buntings and Grasshopper Sparrows have been seen within the Management Unit.^{6 15 2}

A greater number of species used the grazed over the ungrazed plots for feeding, but nested elsewhere. Eastern Kingbirds bred near the grazed plots (1A and 3) in 1980 and on plot 3 in 1981. Tree and Barn Swallows fed over grazed and ungrazed plots in 1980 but did not visit the plots in 1981. Chestnut-collared Longspurs foraged in a grazed plot (3) in 1980. Brewer's Blackbirds bred near and foraged on grazed plot 1A in 1980. A group of Brewer's Blackbirds remained on plot 3 for a period in 1981 but did not remain to breed.

More non-passerine species bred in the grazed than in the undisturbed

Table 1. DESCRIPTION OF STUDY PLOTS.

Plot number	Size	Legal description	Years studied	Regime	Common plant species of the most common lifeforms.
1A	9 ha	NE ¼ Sec 35 T28-R23-W2	1980	Grazed June to October annually.	Grasses: <i>Bouteloua gracilis</i> Dwarfshrubs: <i>Selaginella densa</i> Semi-shrubs: <i>Artemisia frigida</i> Shrubs: <i>Symphoricarpos occidentalis</i> <i>Elaeagnus commutata</i> <i>Rosa</i> sp.
1B	9 ha	NE ¼ Sec 11 T28-R24-W2	1981	Grazed two months per year (Aug. & Sept.)	Grasses: <i>Poa canbyi</i> <i>Carex praegracilis</i> <i>Hordeum jubatum</i>
2	9 ha	SW ¼ Sec 27 T28-R23-W2	1981	Last grazed in 1976	Grasses: <i>Poa canbyi</i> <i>Carex praegracilis</i> <i>Hordeum jubatum</i> <i>Bromus inermis</i> Shrubs: <i>Symphoricarpos occidentalis</i>
3	9 ha	SE ¼ Sec 29 T27-R23-W2	1980 1981	Grazed May to Sept. annually	Grasses: <i>Bouteloua gracilis</i> Dwarfshrubs: <i>Selaginella densa</i> Semi-shrubs: <i>Artemisia frigida</i> Shrubs: <i>Symphoricarpos occidentalis</i> <i>Rosa</i> sp.
4	8 ha	SW ¼ Sec 3 T29-R23-W2	1980 1981	Last grazed in 1975	Grasses: <i>Poa canbyi</i> <i>Carex praegracilis</i> <i>Hordeum jubatum</i> Shrubs: <i>Symphoricarpos occidentalis</i>

plots. Mallards and Killdeer bred on a grazed plot (3) in both years. Willets bred on grazed plots (1A and 3) in 1980 and on a grazed (1B) and an ungrazed (2) in 1981. Upland Sandpipers bred only on grazed plots (1A and 3 in 1980, 1B in 1981). Marbled Godwits bred on all the plots except plot 3.

The number of passerine pairs was consistently higher in undisturbed plots as compared to those subjected to grazing. The trend was similar in the Hand Hills of Alberta but the converse applied at Matador, Saskatchewan and in North Dakota.^{11 10 7} The effects of

grazing on avifauna are apparently not uniform and vary with locale and grazing intensity.²⁰

The overall mean density of breeding pairs was higher in 1981 (275 pairs/100 ha) than in 1980 (262 pairs/100 ha). This is a minor change compared to cases of large annual fluctuation in prairie passerines that have been documented.^{4 5 10 13 14} The population fluctuation observed here may be a sampling artifact. In areas with stable populations, densities derived from individual samples fluctuate annually due to territories shifting into or out of the sample site.^{19 20}

Table 2. PAIRS OF BREEDING PASSERINE SPECIES IN 1980 and 1981.

Plot: Year:	Grazed				Ungrazed		
	1A 1980	1B 1981	3 1980	3 1981	2 1981	4 1980	4 1981
Eastern Kingbird	0	0	0	1	0	0	0
Horned Lark	4	4	3	4	0	0	0
Sprague's Pipit	1	3	2	1	8	5	8
Clay-colored Sparrow	4	0	3	7	1	0	3
Vesper Sparrow	0	0	0	1	0	0	0
Savannah Sparrow	0	0	0	0	7	14	11
Baird's Sparrow	1	0	0	0	8	9	6
Chestnut-collared Longspur	8	10	0	1	0	0	0
Western Meadowlark	1	1	2	2	1	1	2
Brewer's Blackbird	0	0	6	0	0	0	0
Brown-headed Cowbird	1	3	2	2	2	1	2
Total Pairs	20	21	18	19	27	30	32
Total Species	7	5	6	8	6	5	6

Acknowledgments

This study was made possible through the cooperation of the Canadian Wildlife Service and Prairie Farm Rehabilitation Administration. Financial assistance was provided under

DSS contract: 0SU79-100128, by the Faculty of Graduate Studies and Research, University of Regina, and the Saskatchewan Research Council. I thank J.B. Gollop and D.M. Secoy for their comments on the manuscript.



Savannah Sparrow.

G.W. Beyersbergen

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BIG YEAR BIRDING IN SASKATCHEWAN

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A "Big Year" in birding jargon refers to an individual's attempt to see a maximum number of species in a given geographical area within one calendar year. I made such an attempt in Saskatchewan in 1983; this article provides some highlights of my Big Year.

The whole concept of a Big Year has been promoted by *Birding*, the journal of the American Birding Association. Each year they publish life and year list statistics, and a quick check of data from recent years showed the Saskatchewan one-year total rising steadily, with Wayne Harris setting one new mark after another.¹ The record showed:

1977	263 species (79.7%)	Wayne C. Harris
1980	267 species (80.9%)	Wayne C. Harris
1982	276 species (83.6%)	Wayne C. Harris

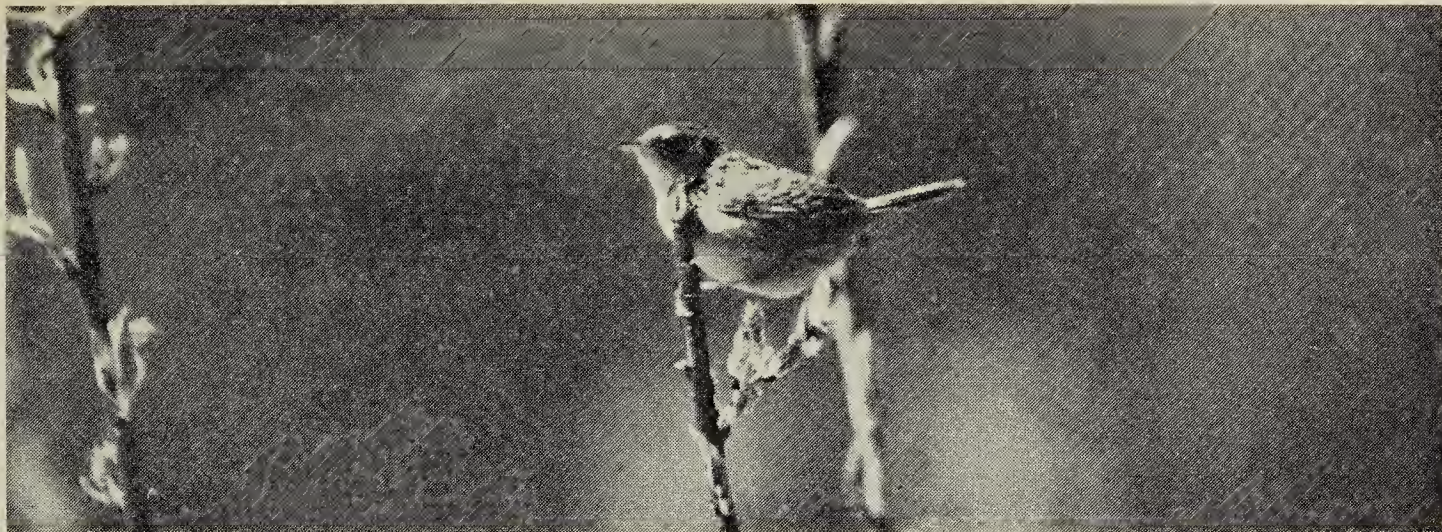
The percentages represent a comparison against the rounded-off all-time provincial list of 330 confirmed species. Being naturally competitive, I was excited by the thought of trying to set the new record, but didn't actually start in earnest until after a highly successful June trip to the Cypress Hills.

The year began with two Glaucous Gulls on the river in Saskatoon in January after which I stayed indoors for a couple of months while winter had its way. A mid-March trip along the Squaw Rapids — Cumberland House road yielded five Great Gray Owls, as well as a grey phase Gyrfalcon and Hoary Redpoll on the way there. Two weeks later most of the other

northern owls were recorded in the Prince Albert National Park (P.A.N.P.) area: Barred, Boreal and Northern Saw-whet. In early April Sherwood Forest near Regina contained an Eastern Screech-Owl. A week later one of the two Townsend's Solitaires in Saskatoon's Woodlawn Cemetery was seen.

In late April spring migration began in earnest and I was in the Saskatoon area until the end of May. Although no real rarities were seen some of the interesting species included Greater Scaup, Forster's Tern, Osprey, Peregrine Falcon, Red Knot, Dunlin, Ferruginous Hawk, Hudsonian Godwit, Virginia Rail, Buff-breasted Sandpiper, Philadelphia Vireo and Sharp-tailed Sparrow. By the end of May 197 species had been seen, only one of which appeared on the revised provincial checklist as a "straggler", namely the Glaucous Gull.²

In the hope, vain hope it turned out, of finding Mountain Plovers, I took a week off to bird the Cypress Hills area. A Piping Plover at Gardiner Dam on the way there, as well as Lark Sparrow at Saskatchewan landing were of note. At Jones' Peak near Eastend Prairie Falcon, Rock Wren, Turkey Vulture and Violet-green Swallow were added to the list, while the Cypress Hills produced Cinnamon Teal, MacGillivray's Warbler, Trumpeter Swan, Common Poorwill, Wild Turkey and Dusky Flycatcher. Farther south near the ghost town of Govenlock McCown's Longspur, Brewer's Sparrow, Sage Grouse, Say's Phoebe and a breeding pair of Northern Mockingbird were the highlights. My return trip to Saskatoon via the newly-created Grasslands National Park (a must for anyone who



Sedge Wren

Fred W. Lahrman

likes wild places) yielded Yellow-breasted Chat and Willow Flycatcher.

Back in the Saskatoon area were Grasshopper Sparrow and Yellow Rail, and a mid-June trip to the Squaw Rapids area produced Whip-poor-will and Chimney Swift as well as many warblers and flycatchers. A late June visit to the southeast corner of the province produced an Indigo Bunting in the Qu'Appelle River valley near Tantallon, and an Orchard Oriole in Estevan. At the end of June 246 species had been recorded but still only the one straggler.

Not all trips were successful. I looked for an Eastern Wood-Pewee in Greenwater Provincial Park in early July but did not find it. A week later a trip to Dore Lake yielded Caspian Tern, Yellow-bellied Flycatcher and a Northern Hawk-Owl with two fledglings. On that same trip a Sedge Wren was seen near the southwest corner of P.A.N.P. In late July I visited P.A.N.P. again, finding Spruce Grouse and Nashville Warbler. At the end of the month I drove down to Regina to see a Lazuli Bunting, the same trip producing two sightings of Wood Ducks. By the end of July I'd reached 259 species.

In August I added only four species. Labour Day was spent in the rain in P.A.N.P. and the Emma Lake area

where Winter Wren, Smith's Longspur and a second straggler — Northern Parula were added. Blackstrap Lake near Saskatoon had a mid-September Harlequin Duck and Buffer Lake an American Black Duck. Then another straggler, an Arctic Loon in breeding plumage showed up at Blackstrap Lake, and Whooping Cranes at Buffer Lake. By the end of September I'd reached 273 species including four stragglers.

An early-October trip to Buffalo Narrows yielded no species, but on the way back I stopped in Biggar to see the Varied Thrush reported there. Then near the middle of October a pair of Barrow's Goldeneye were found at Blackstrap Lake and later that month a King Eider. At the end of October I travelled to Buck Lake south of Regina where I saw Brant that had been reported from there. By month's end my count stood at 278 species, including 7 stragglers.

Yet another rare duck turned up at Blackstrap Lake in early November when a Black Scoter was found. The next day a pair of Oldsquaw were seen at Broderick Reservoir near Outlook. In the middle of November a trip to the Cypress Hills yielded Rosy Finch. I capped off my year's list with Willow Ptarmigan which I saw in Stony Rapids on a well-timed business trip.



Lazuli Bunting

Fred W. Lahrman

The final total was 282 species, including 8 stragglers, out of a confirmed provincial all-time list of 338 species including 47 stragglers. My Big Year has taken up about 680 hours of field work and I had driven about 25 thousand km! Of the 17 non-stragglers that I did not see (at least 10 of which did show up in Saskatchewan in 1983 as they were reported by others, marked by * below), the Passenger Pigeon is extinct; Greater Prairie-Chicken, Chukar and Mute Swan are either extirpated or very rare; a trip to Lake Athabasca in June would have likely turned up Red-throated Loon, Parasitic Jaeger*, Mew Gull*, and Arctic Tern*; time spent in the eastern Qu'Appelle and Souris River valleys would probably have produced Red-headed Woodpecker*, Eastern Bluebird*, Black-throated Blue Warbler*, and Scarlet Tanager*; and always hard to find because they occur so sporadically are Great Egret*, Cattle Egret*, Sage Thrasher, Blackheaded Grosbeak* and Dickcissel.

Stragglers which were seen in the province in 1983 by others but which I did not see were: Snowy Egret, Eurasian Wigeon, Whimbrel, Sabine's Gull, Eastern Wood-Pewee, Clark's Nutcracker, Pine Warbler and Golden-Crowned Sparrow. Thus the total provincial list for 1983, to the best of my knowledge was 300 species (almost 88.8%). Is it possible to see (over 90% of the provincial total) in one year 305 species? With a full year of effort, and a network of birders on the lookout for rarities, yes it probably is. Who will answer that challenge?

¹BIRDING — Supplement to Volume XV, No. 1, February 1983, Amer. Birding Assoc.

²KREBA, R. 1983. Field checklist for Saskatchewan birds, sixth edition. Mus. of Nat. Hist., Sask. Culture & Recreation.

ABOUT GREBES

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For three days in June there was a Wildlife Technician here to gather eggs of the Red-necked and Eared Grebes. There is a possibility that they pick up toxic material on their wintering grounds on the Pacific and that might be the reason for their poor reproduction. We gathered about a dozen eggs of each species in a short time (one egg out of each nest). For the Red-necked Grebes we had to go to three different lakes. The Eared Grebe eggs we picked up in a matter of hours out of one breeding colony.

The Red-necked Grebe nests are farther apart, not always in bullrushes, but close to shore in the open, built out of material that they bring up from the bottom. The Red-necked Grebes seem to be careless in their breeding habits. As soon as the canoe approaches they leave their nests, dive and surface far out on the lake. Sometimes they cover their eggs, other times they do not even do that. This might be the reason that we found many disturbed Red-necked Grebe's nests.

When approached, the little Eared Grebes leave their nests all at the same time, stay close by and make a sort of complaining muttering sound.

I was going to check on the different nests in early August, instead I spent my time in hospital beds.

Near the house, barn and corrals on our ranch, there is a beautiful, deep, spring-fed, little lake. Through the years it supplied drinking water in the winter for hundreds of cows and calves and dozens of horses. We always had a breeding pair of Red-necked Grebes on that lake. They came early in May,

mostly at night. When four or five came at the same time there was a lot of territorial fighting. You could hear their braying call even during the night. When everything was settled a pair of coots nested on one side of the lake, the Red-necked Grebes on the other.

In their mating display, the Red-necked Grebes sometimes stand straight up in the water facing each other. Once I saw one dive, bring up some green moss from the bottom and put it on a floating stick. While doing this they make a soft quacking noise.

The nest is built close to the shore. They keep working at it even during the incubation period. The adults spell off on the nest but I never saw both parents carrying the young. One dives, brings up something and feeds it to the young carried by the other one. What that something is I do not know.

When small the young do not take easily to the water. Once I followed the pairs in the canoe. The one carrying the three small young stayed above the water longer than the other one. When it finally dived, two of the young seemed to want to get in the canoe. When I put the paddle in the water, both crawled onto it. The young are fed until about half grown.

Several mother ducks brought their young to the lake to raise. the young grebes mixed freely with the ducklings. About halfway through September all the grebes were gone from our lake. About that time there were hundreds of grebes on Big Manitou Lake. Maybe that is a staging area before migrating to the Pacific.

BALD EAGLE MIGRATION IN SOUTHEASTERN MANITOBA

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Gerard and Hatch recently described the migration of the Bald Eagle through southern Saskatchewan and Manitoba, and North Dakota.¹ They appear to understate the importance of migration routes in southeastern Manitoba, especially with regard to spring migration along the Red River, and fall concentrations on or near southern Lake Winnipeg. We believe the following notes will shed more light on this subject.

Table 1 lists daily counts of five or more Bald Eagles in southeastern Manitoba, during spring and fall migrations between 1978 and 1983, inclusive. This should be regarded as a representative sample, since it includes only those records which are readily at hand to us. Eagles and various other diurnal raptors make extensive use of thermals rising from the wooded banks of the Red River, especially in springs when snow still covers the ground in late March and early April.

The records at St. Adolphe (on the Red River about 12 km south of Winnipeg) present a different picture from Shortt's observations in Winnipeg, as cited by Gerrard and Hatch — 14 Bald Eagles in 2 days of observation in one spring, as opposed to 6 sightings in 50 years. From personal observation, Koes has found that large numbers of raptors bypass Winnipeg by following the La Salle River upstream or, especially in the case of Bald Eagles, by following the Red River Floodway in a northeasterly direction around the city. As St. Adolphe is not continually manned by birders, the total number of eagles passing by is not known. The highest count was nine on 15 April

1979; more typically, two or three birds will come over during the few hours of observation.

Gerrard and Hatch refer briefly to a large spring movement through Whiteshell Provincial Park; the large triangular symbol in their Fig. 2 corresponds to the 20 April 1982 record in Table 1. The high counts on the Rennie River appear to be local concentrations of birds in the course of migration along the Winnipeg River system. A few Bald Eagles are almost invariably seen on birding outings along the Winnipeg River in late March and April.

The Allegra and River Hills records are interesting, since they involve small concentrations of Bald Eagles several km from major waterways. On 8 April 1978 Taylor and Reto Zach saw an adult and a subadult bird migrating northward along the boundary between forest and farmland, alongside a low glacial beach ridge near Allegra. Three subadult birds were resting in a stubble field nearby. It was an overcast day, with a blustery southwest wind. The slight topographic relief of the beach ridge, in otherwise flat territory, may have attracted the eagles to this route, which lies about 6 km east of the Brokenhead River, and 20 km west of the Winnipeg River. The six birds seen by Taylor near River Hills on 3 April 1983 had clearly been attracted by offal in a field, some 7 km south of the Winnipeg River, and 3 km east of the much smaller Whitemouth River. Up to four Bald Eagles have been seen at the same locality in other springs.

Figure 3 of Gerrard and Hatch indi-

Table 1. RECORDS OF FIVE OR MORE BALD EAGLES PER DAY DURING MIGRATION IN SOUTHEASTERN MANITOBA, 1978-83.

<i>Location</i>	<i>Date</i>	<i>Number*</i>	<i>Observers</i>
Allegra	08/04/1978	1a, 4i	P. Taylor, R. Zach.
Rennie River	21/04/1978	12u	M.G. Siepman.
St. Adolphe	31/03/1979	3a, 2i	Manitoba Naturalists Society (M.N.S.) field party.
St. Adolphe	15/04/1979	1a, 8i	M.N.S. field party.
Oak Hammock Marsh	18/11/1979	3a, 3i	N.J. Cleveland, D.R.M. Hatch, G.E. Holland, R.F. Koes, J. Zoch.
Oak Hammock Marsh	25/11/1979	2a, 6i	R.F. Koes.
Hecla Island Provincial Park	15/11/1980	4a, 3i	M.N.S. field party.
Victoria Beach	11/10/1981	5u	R.F. Koes.
Patricia Beach	27/10/1981	4a, 6i	M.G. Siepman.
Patricia Beach to Grand Beach	01/11/1981	3a, 9i	A. Blewett, N.J. Cleaveland, G.D. Grief, G.E. Holland, R.F. Koes, I.A. Ward.
Rennie River	20/04/1982	5a, 13i	D.R.M. Hatch, M.G. Siepman.
Seven Sisters to Victoria Beach	16/10/1982	6a, 4i, 1u	P. Taylor
Hecla Island Provincial Park	06/11/1982	5a	G.E. Holland, R.F. Koes, P. Press et al.
Patricia Beach to Victoria Beach	13/11/1982	3a, 2i, 1u	M.N.S. field party.
River Hills	03/04/1983	3a, 3i	P. Taylor.
Patricia Beach and Beaconia	19/10/1983	5a, 15i	M.G. Siepman.
Hecla Island Provincial Park	25/10/1983	4a, 4i	R. John.
Lac du Bonnet	02/11/1983	8a	E. Kozak, D. Smith.
Patricia Beach to Grand Beach	05/11/1983	5a, 12i	M.N.S. field party.
Oak Hammock Marsh	05/11/1983	4a, 11i	G.E. Holland.

* a = adult, i = immature or subadult, u = undetermined or unrecorded.

cates minimal fall migratory movements of Bald Eagles in southeastern Manitoba. This is at odds with our data (Table 1). Up to 20 Bald Eagles per day have been observed along the southeastern shore of Lake Winnipeg, from Patricia Beach to Victoria Beach, in October and November. Up to eight birds per day have been seen at Hecla Island; many more probably occur, since much of the area can not be surveyed satisfactorily from the ground. The 11 Bald Eagles seen on 16 October 1982 included 7 birds scattered along the Winnipeg River from Seven Sisters to the outfall in Traverse Bay, Lake Winnipeg.

Oak Hammock Marsh has harboured at least 15 Bald Eagles at one time. They are especially numerous in falls when many crippled waterfowl are present. Some of the birds seen at Hecla Island and along the Winnipeg River may have been local residents which had not yet begun to migrate, but other sightings were away from known nesting territories.

Taylor has observed single Bald Eagles migrating up the Winnipeg River near Pinawa in November, and small numbers occur there into December. There are only scattered records of migrating eagles along the Red

River in fall. It therefore appears that the Winnipeg River is the more important route by which Bald Eagles leave southeastern Manitoba, but the gradual nature of this withdrawal makes this aspect hard to assess.

¹GERRARD, J.M. and D.R.M. HATCH. 1983. Bald Eagle migration through southern Saskatchewan and Manitoba and North Dakota. *Blue Jay* 41:146-154.

HUMMINGBIRDS AT ITUNA, SASKATCHEWAN

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My brother, Tom Yates and his neighbour put up feeders for the hummingbirds in Ituna. In July 1983 Tom discovered a hummingbird's nest in his front yard. It was situated on a horizontal branch of a black poplar tree just at eye level, and from the front was completely concealed by a large overhanging leaf.

On the outside the nest was covered with tiny flakes of grey lichen and it was lined with soft white cotton from some flower seed heads. The whole would have fit into an egg cup. The photograph of the nest was taken 11 July 1983. At that time there were 2 tiny white eggs in it about the size of small white beans, which soon hatched into



Hummingbird nest.

Mary Brennan



Incubating hummingbird.

Mary Brennan

little black morsels which looked like nothing so much as small black spiders. They grew rapidly, until 2 fully-fledged young hummingbirds were sitting in a very overcrowded nest. During this time I was able to take the series of pictures which accompany these notes. In the last of these, one of the young birds has already flown from the nest, but the second posed for a close-up picture, to all appearances, completely unafraid. It left the nest later that same afternoon.

In the early summer I witnessed another curious incident involving hummingbirds in my own garden. A female hummingbird was busily feeding among the honeysuckle blossoms, while the male, suspended about 10' above her as if on a long string, was swinging back and forth in a constant arc, the length of which never varied. This continued for several minutes, while the female continued feeding, paying not the slightest attention to his antics. I would be interested to know if anyone else has observed a similar incident.

EDITOR'S NOTE: In his *Life histories of North American cuckoos, goatsuckers, hummingbirds and their allies* (Dover, New York, N.Y. 1964), A.C. Bent writes: "In his courtship display the male rubythroat makes use of his marvelous proficiency in flight ... swinging back and forth along the arc of a wide circle, we get the impression of a bird upheld by a swaying wire; his swings are so accurate and precise that they suggest a geometric figure drawn in the air rather than the flight of a bird."



Young ready to fledge.

Mary Brennan

FURTHER OBSERVATIONS OF GREAT-CRESTED FLYCATCHERS

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For the past three summers I have been privileged to observe the entire nesting period of Great-crested Flycatchers. Since my detailed report in *Blue Jay* of the nesting of this species in 1981 I have been able to make a few more interesting observations.¹

On 4 June 1982, as we entered the gate to our property at Whytewold on Lake Winnipeg, I heard a pair of these birds and watched while one of them examined the same box inhabited by Cresteds in 1981. The next day they returned and nest building commenced. I was not, however, able to determine if both sexes build, but Hal Harrison says they do.⁴

At various times during incubation, when the female flew out of the box, I noticed that the male appeared on the stoop and peered in, but I did not ever see him enter the box until the young had hatched. On several occasions I observed that, when an adult carried the feces from the nest box, its flight pattern was belaboured; it swooped down low and then rose higher (like an aeroplane) and sometimes flew 18 to 21 m away from the box.

By 17 July the nesting had been completed successfully. The parents, with their three fledglings, remained in the area until 17 August, which was the last day I heard their calls.

Then, in the spring of 1983, Great-crested arrived again on our property. Bent says, "The impression seems to prevail that passerine birds select new mates each year, but evidently this is not always the case with the Crested which seems to show great attachment

to its home territory and, sometimes, to its former mate."²

This time, however, there was a frantic three-bird chase. On 9 and 10 June the temperature was 27°C and the birds kept up their unbelievably swift chase for hours at a time; I thought that one or other might collapse from exhaustion. Their incessant raucous calls could be heard all over the neighbourhood. One bird flew into an empty shallow nestbox several times and another flew at this bird. Several times the three birds flew around the box used by a pair in 1981 and 1982 but, unfortunately, this box had been chosen by a pair of Tree Swallows a few days earlier. Needless to say, the Tree Swallows were ever on the alert in case one of the Cresteds tried to investigate the entrance to the nest box.

Fortunately, there was another suitable box available; it was attached to an old poplar tree about 4.5 m from the original box, but deeper into the wooded area. On 16 June I finally noticed, through the thick foliage, that a Crested came out of this particular box.

9 July, during the period when the adults were feeding the young, I was greatly disturbed to find a dead Crested male on the grass close to a driveway across the road from our cottage. For a few hours it seemed that my hopes for a successful nesting had vanished. However, the next day I was very relieved to see two adults making frequent trips to feed the nestlings in our box. (The thought had occurred to me at that time that the dead male might have been the other male which took

part in the three-bird chase.)

I have been particularly interested in the materials used in nest construction. A search of literature reveals that a piece of cast-off snakeskin is frequently used in the building of the Cresteds' nests. Detailed account of the contents of the 1981 nest has already appeared in *Blue Jay*¹.

The 1982 nest had a peat moss base (as in 1981), bits of dead leaves and brown paper, a length of brown string, a narrow strip of raccoon fur, and one infertile egg.

The 1983 nest had some very small wood chips at the base, dried weed stems, grasses, several black feathers, small pieces of American Robin eggshell, a small piece of waxpaper, a few strips of shredded newspaper and, in one corner at the side of the cup, was a piece of muskrat belly fur. In *none* of the three nests was there a piece of the proverbial snakeskin.

In 1939 A.G. Lawrence stated that in different areas of Winnipeg a person "found three nests but no cast-off snake's skin decorated the entrance holes, as is often the case in the eastern states."⁵ Godfrey mentions that "there has been considerable speculation as to why the Crested so frequently places a piece of cast-off skin in its nest..."³ Henry Mousley states that a nest he observed in 1932 in Quebec had "a quantity of fine animal fur ... but no signs whatever of the proverbial snakeskin."⁶

In this regard Bent states "there can be no doubt that such old skins are often, perhaps generally, found in the nests, though they are usually found in small pieces and are often entirely lacking or replaced with something else of similar texture."² Vaiden says "that from a total of 37 nests examined in the past 30 years, snakeskins have been found in only 14."² Prof. Maurice Brooks says of one nest, "The birds had evidently been unable to find the

pieces of snakeskin, which they are accustomed to place in their nests, but in this case they had substituted 3 pieces of the yellowed outside skin of an onion. This is the only nest I have ever seen that did not contain at least one piece of snakeskin."²

Apparently, the reason for the use of snakeskin remains unknown. Hal Harrison states that the "theory that snakeskins are used in nest to frighten away predators unacceptable. Probably that bird does not recognize snakeskin as such; that it is used along with other available trash as desirable material."⁴ Bent agrees and adds, "The fact that the Crested has been found so often using such material as onion skins, thin, greasy, or waxed paper ... suggests that either these bright shiny substances attract their attention, or that they, like snakeskins, furnish a certain degree of resiliency, or perhaps ventilation, in the nest."² John K. Terres mentions snakeskin, along with the other usual material, and then states, "cellophane and onion skins apparently because of shininess comparable to that of snakeskin."⁷

I am looking forward to the spring of 1984 with the hope that I shall be able to make further observations of the nesting habits of this interesting member of the Flycatcher family.

I wish to thank Mr. Herb Copland and Dr. Kenneth Wrigley for examining the nests.

¹BANCROFT, JEAN. 1981. Great-crested Flycatcher. *Blue Jay* 39(4):226-227.

²BENT, ARTHUR C. 1963. Life histories of North American flycatchers, larks, swallows and their allies. Dover reprint. New York. 555 pp.

³GODFREY, W.E. 1966. The birds of Canada. Nat. Mus Canada Bull. 203.

⁴HARRISON, H.H. 1975. A field guide to birds' nests in the United States east of

the Mississippi River. Houghton Mifflin, Boston. 257 pp.

⁵LAWRENCE, A.G. 1939. More Winnipeg nesting reports. Chickadee Notes No. 960, Winnipeg Free Press, 18 August 1939.

⁶MOUSLEY, HENRY. 1934. A study of the home life of the Northern Crested Flycatcher. Auk Vol LI:207-216.

⁷TERRES, JOHN K. Ed. 1980. Audubon Society encyclopedia of North American birds. Knopf, New York. 1280 pp.

EASTERN BLUEBIRD NESTBOX REPORT

L.A. SMITH, #303, 481 Vaughan Road, Toronto, Ontario. M6C 2P6

The season of 1983 was disappointing. Doubly so since we dug in 140 new posts, wrapped metal around these posts to keep out raccoons and other pests and made new boxes and re-worked and cleaned the older boxes. The figure of 114 good nestings is the same as 1982. We can take consolation from the fact that we are not going backwards!

However we are puzzled by the unknown factors which prevented an increase in successful nests. Cold

weather in May, the aggressive behaviour of 400 pairs of Tree Swallows, wrens puncturing or removing eggs, poisonous sprays along country roads ... all might be factors keeping bluebirds rare. If we did expand into arable land and cities a trap to kill weaver finches (House Sparrows) would become necessary. These pests are the main reason for the poor showing of the bluebird of happiness.

Bill Read banded a total of 107 birds in the nestboxes. This is the highest number banded so far.

Table 1. YOUNG EASTERN BLUEBIRDS IN NESTBOXES, 1983*

Location	Brood	No. Nests	No. Young
Adjala	1	6	23
Adjala	2	2	8
Caledon/Albion	1	14	57
Caledon/Albion	2	3	10
Great Pine Ridge	1	8	39
Great Pine Ridge	2	6	25
Mono	1	28	121
Mono	2	20	70
Mulmur	1	14	60
Mulmur	2	6	18
Tosorontio	1	6	27
Tosorontio	2	1	4
Totals		114	462

*Average clutch size of fertile eggs 4.05.

REDPOLLS ATTRACTED TO A LURE

CHRIS SIDDLE, 8927 116th Avenue, Fort St. John, British Columbia. V1J 2Y2

At 1130 h, 14 January 1984 (a calm, overcast day of about minus 20°C), Joan Johnston and I were attempting to attract an immature Snowy Owl along a road bordering a stubble field about 8 km northwest of Fort St. John, British Columbia. Our lure was a frozen vole (*Microtus* sp.) tied to the end of approximately 50 m of fishing line and cast by rod over the snow. Joan was about 30 m from the owl which was perched atop a hydro pole. She had cast the dead mouse along the weedy edge when, to our amazement, instead of attracting the owl, we "got" a flock of about 30 Redpolls, mostly Hoary Redpolls, with at least 2 Common Redpolls noted for sure. The finches suddenly appeared in a nearby patch of willows and dropped down singly or in little groups of two to five birds to land on weeds or on the snow close to the lure. The birds vocalized very frequently and followed the mouse as Joan reeled it in. As each bird would make one to six investigations, a dramatic flurry of redpolls appeared to follow the mouse.

Joan cast a second time and as she reeled in the frozen rodent, down fluttered at least 15 redpolls, again in pairs or trios. This time the Snowy Owl left its perch to make a single pass, flying over us at about 6 m. Strangely, the entire flock of redpolls left the lure and, joined by 30 more from the willows, flew after the Snowy Owl, circling around it once that it had landed several telephone poles away from us. It was quite apparent to both of us that the redpolls were following or pursuing the owl, and not merely flying in the same direction.

We continued casting for another 15 minutes, during which time about 10 to 15 redpolls, mostly Hoaries, would flutter about the lure, always watching it as it was jerked through the grass and over the snow.

By 1200 h we were attracting only three or four Hoary Redpolls so we quit. The bulk of the flock had flown elsewhere.

It is difficult to describe the intentness of the finches' interest when they were first attracted to the lure. Although none landed on the dead mouse, several got within 3 or 4 cm of it. All birds appeared to watch it intently. Of further interest is the contrast between the tameness of these birds when they were investigating the lure, sometimes fluttering right beside us, to their wariness of an hour before when I had tried to photograph them feeding along the same road.

Robert Nero reported a similar experience he had with a Downy Woodpecker that twice inexplicably investigated his artificial lure.¹ I, too, am at a loss to explain the interest in lures shown by woodpeckers or redpolls.

¹NERO, ROBERT W. 1983. Downy Woodpecker shows investigative behaviour to artificial mouse. *Blue Jay*. 41(3):168.



Common Redpoll.

Sheina Wait

PERSISTENT BARN SWALLOWS AT SYLVAN LAKE

W.B. PARSONS, Box 418, Sylvan Lake,
Alberta. T0M 1Z0

Three years ago I had a major problem with Barn Swallows. Each time I took my little tractor out of the shed to cut the grass, they started to build on the rafters. Before I was aware of it, the mud nest was half built. From then on, whenever I opened the door, they flew in. So I closed the door whenever I took the tractor out. The droppings did not look attractive on the tractor.

For the next two summers the birds tried to get into the shed whenever I opened the door; however, I won out. They built on a light fixture adjacent to the small door of the shed (Fig. 1). Then this August, after I had been away for a few days, whenever I opened the door, I had the impression of something flying out. Several days passed before I was sure; then I took a belated look up at the rafters. The nest had been completed and a bird was peering over the lip of it.



Figure 1. *Barn Swallow nest.*

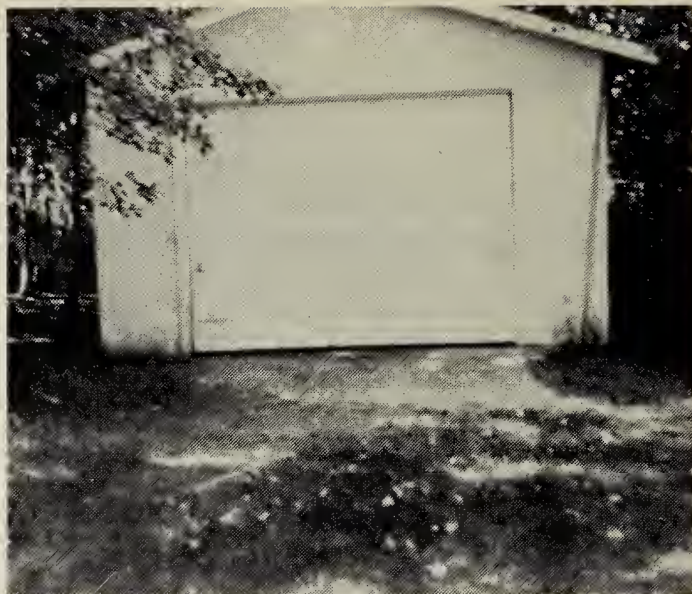


Figure 2. *Gap under shed door.*

I could not figure out how they got in until I closed the door and saw that there was a slight gap between the bottom of the door and the cement (Fig. 2). This was made during the winter when the weather strip froze to some ice and was torn off. The birds had sneaked in via this 1.5 in. (4 cm) gap, and had completed their nest.

It was too late to do anything about it; obviously there were eggs in the nest and I was going to have some cleaning up to do. I didn't climb up to count the eggs or the young but I watched. I saw the parent birds carrying food under the door. On 9 September when I went into the shed, the five young were on the rafter as shown in the picture (Fig. 3). Two days later they were gone.

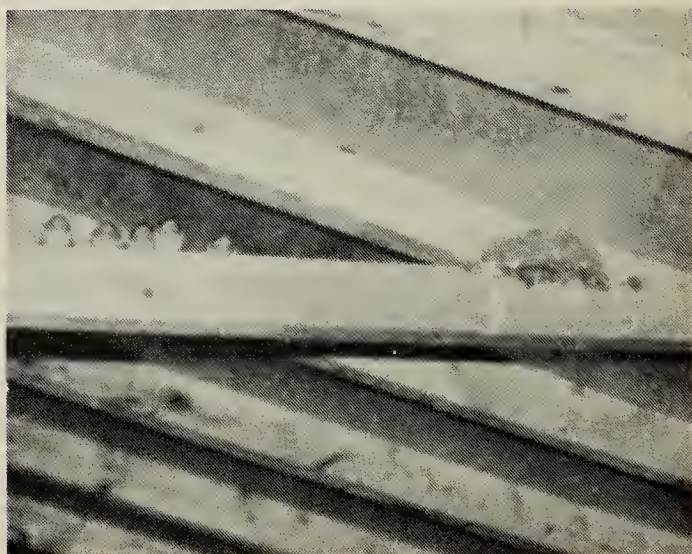


Figure 3. *Fledgling Barn Swallows.*

YOUNG BALD EAGLE AND HARLAN'S HAWK IN THE SAME NEST

GARY G. ANWEILER, D. Blood and Associates Ltd., Site 60, Box 8, R.R. 1, Lantzville, British Columbia. V0R 2H0

While counting young eagles in nests in southwestern Yukon from a helicopter on 25 July 1982, Ross Eccles and I visited a nest that had contained a single young Bald Eagle a month earlier. The nest was about 10 m up and on one side of a live spruce tree on the banks of the Koidern River. To our surprise, two young birds were present in the nest, a 7 or 8 week old Bald Eagle and a smaller, fully-feathered young raptor. As we made several close passes by the nest in an attempt to identify the smaller bird, it leaped back and forth across the nest, keeping as far from the helicopter as possible. The young Bald Eagle lay flat and immobile during this time, moving only its head, typical behaviour for young of this species under the circumstances. Unable to positively identify the second bird, we departed.

On our return flight about 3 hours later we saw that the mystery bird was no longer in the nest, but perched in a tree about 20 m away. We landed and approached on foot, but when we were still 50 m away it flushed and flew to a second tree 75 m distant, appearing quite strong on the wing. As we approached a second time it flushed again, this time flying 200 m and landing on top of a small spruce, where it lost its balance and hung head down. We were then able to capture it by hand, photograph and identify it as a fledgling Harlan's Hawk*. It proved to be extremely thin, with the keel of the breastbone sharply defined and protruding. Down was present around the

eyes and cere, and the wing coverts were not fully developed.

It appears that this young hawk, extremely hungry, had been attracted to the eagle nest, possibly by the activity of the young or adult eagles. At no time during either visit were the adult eagles seen, and no other Harlan's Hawks were observed in the vicinity.

BREEDING BIRD SURVEYS

As you may know, the Canadian Wildlife Service has been conducting the Co-operative Breeding Bird Survey (BBS) in Canada since 1966. This survey is the only one in operation that is able to detect and measure year-to-year changes and long-term trends in the populations of many native bird species.

Ideally, to accomplish this feat, we depend on a network of qualified volunteer observers from across Canada who are not only able to readily identify birds by sight and song but who can also commit themselves to the survey for several years. Potential Co-operators less experienced in bird identification but willing to undergo a training during their first year are equally encouraged to participate.

In recent years participation in this survey has been declining. We are asking for new volunteers to take on BBS. For information about the status of available routes in your area, please contact your regional co-ordinator: Dr. J.B. Gollop, Research Scientist, Western & Northern Region, Canadian Wildlife Service, 115 Perimeter Road, Saskatoon, Saskatchewan S7N 0X4.

For further information about this survey, please contact Marc Galwin, A/Co-ordinator, Populations & Surveys Division, Migratory Birds Branch, Canadian Wildlife Service, Ottawa, Ontario, K1A 0E7.

*The dark northwestern subspecies of the Red-tailed Hawk.

VISITORS TO A BIRD FEEDER

BILL ANAKA and JOYCE ANAKA, Box 211, Yorkton, Saskatchewan. S3N 2V7

We have several bird feeders in our yard every winter to satisfy our numerous feathered boarders. Two of these feeders are left out every summer to attract the occasional chickadee or woodpecker. It was some time in October 1983 that we realized the rolled oats in one feeder, set up near a large Balsam Poplar, were being consumed rapidly. This is a small enclosed feeder measuring approximately 30 cm x 25 x 20 with a glass front. It sits on a section of tree trunk 1.3 metres high. When we realized the food was disappearing overnight we presumed the nocturnal visitor was probably a mouse or vole. A mousetrap was duly placed in said feeder after dark and retrieved before sunrise. The trap was sprung and empty. This procedure was repeated several times with the same results and a continuing consumption of rolled oats.

After the first snowfall in November the mystery deepened. There were no tracks at the base of the feeder, mouse or otherwise, yet the rolled oats were being eaten every night. We know that over the years people have kidded us about living on the edge of that "Lake of the Spirits" (Good Spirit Lake), but we really didn't think the ghosts and spirits of the lake would be interested in rolled oats!

Repeated checking of the feeder with a flashlight through the kitchen window brought results a few nights later when a dark shape was observed inside the feeder. The sudden bright light did not disturb it and closer scrutiny through binoculars revealed it to be, not a ghostly figure, but a Northern Flying Squirrel. A few evenings later we observed two squirrels in the feeder. Usually only one squirrel at a time is

present in the feeder but on several occasions two have fed together. Feeding times have varied from as early as 7 p.m. in November/December to midnight and later, with no set pattern except that they will feed some time during the night. Only one night throughout the entire winter was the food untouched. The addition of a few peanuts to the diet every evening appears to be much appreciated — it took the squirrels a few nights to learn how to shell them! They have also fed on suet, baking powder biscuits and brownies but draw the line at raisins. Rolled oats remains the staple diet.

This is not the first local record of the Northern Flying Squirrel. In September 1979 a dead one was found beside the box where the family cat slept. This specimen was preserved in the freezer and delivered to the Saskatchewan Museum of Natural History in Regina on 24 October 1979.

The Northern Flying Squirrel is probably not an uncommon species locally but, being nocturnal, it escapes observation. While sitting in a blind to obtain photographs of our nightly visitor it's whistled call was heard shortly before it appeared. We realized that this was a call heard here several times over the years — always at night.

Perusing back issues of the *Blue Jay* we found most records for this species are from the Boreal Forest Region with a scattering of reports from the parklands. Frequent comments on the sightings were to the effect that it was the first one that had been seen. And in at least two cases it was the family cat that had caught one overnight and left the specimen for identification. Sites chosen for nests were widely varied —

from bluebird nest boxes on the Brandon line, to timber bridges at Tisdale, to the box serving as a seat in the lookout room on top of a fire tower near Glaslyn.

A search of the surrounding woods for the den tree has proven unsuccessful so far. We have tapped and knocked and pounded on literally dozens of trees with woodpecker holes in them with no results. But with an elusive species such as the "Fairy Diddle" (a popular name for all species of flying squirrels), some mystery must remain. The search for the den tree goes on. The rolled oats and peanuts continue to disappear every night.

LYNX PREDATION

HANS DE VOGEL, Box 219, Neilburg, Saskatchewan. S0M 2C0

I would like to tell you about an experience I had once. One year we decided to try and raise some ducks on our lake. Early in May we got thirty-one, day old White Peking ducklings, from the hatchery. We easily raised them in the barn under a heat lamp. When their feathers started to show we brought them to the lake, at first within a snow fence half in and half out of the water. They had a wooden feed trough and we fed them boiled braley mixed with chick starter. There were thirty then; one had gotten stepped on by a cow. After about ten days we took the snow fence away and let them go.

It was a beautiful sight to see, the white ducks spread all over the lake, until one morning they would not come for their feed. Instead they stayed in a tight bunch in the middle of the lake. I got my binoculars, stood on the hill and counted twenty-seven ducklings. The next morning the same thing and there were another four missing.

That same day after dinner, we heard crows and magpies giving alarm calls near the lake. I walked over and the same thing, a tight bunch of ducks in the middle of the lake. Only one thing was different, there was a small boy in a grey sweater sitting down beside the feed trough looking at the ducks. (That was my first impression). The small boy stood up and turned into a big long-legged Lynx. She looked straight at me with her big yellow eyes. In two bounds she was on the wooden fence that runs from the corrals to the lake. Then she turned around and looked at me again. With a sort of silent snarl, she disappeared into the water willows. I saw right away that it was a lactating female. She must have caught two or three of our ducks every day when they came to shore to feed, preen their feathers and sleep. There must have been lynx kittens in the bush nearby.

We rounded up our remaining twenty-two ducks and took them to a neighbour to raise. In the fall, they were as big as small geese. We gave a lot of them away and had roasted duck quite often that winter.

That same fall on our nearest neighbour's farm, a tame goose was killed. It was dragged into the bush, fed on and covered with snow and dried leaves. The neighbour set a trap and the next day there was a small Lynx in it. That could have been one of our Lynx kittens.



Lynx

J.G. Gollop

NATURE LIBRARY

A BIRD-FINDING GUIDE TO ONTARIO

CLIVE E. GOODWIN. 1982. 14 x 21 cm. University of Toronto Press. Paperback. 248 pp.

The 'sport' of listing and the 'art' of bird-finding have finally come of age in Canada. Not surprisingly, Ontario, with its large population of bird watchers has been among the first provinces to devote an entire guide to bird-finding.

The author, Clive Goodwin, is no stranger to bird-watching, having edited the Ontario regional reports in *American Birds* for 17 years. His knowledge, here combined with that of the best of Ontario's birders, forms the basis for an impressive catalogue of prime birding places.

Ontario has a diverse avifauna with 417 well-documented species, of which at least 276 have nested (this compares, for example, with Saskatchewan which has acceptable records of 336 species of which 241 have bred). With ranges of latitude and longitude of over 1600 kilometers each, listers intent on shattering old records and more casual naturalists looking for a stimulating outing will welcome such a comprehensive guide.

The book is divided into four major sections. The first gives general information on the status of Ontario birds. The second, consisting of six chapters,

provides regional accounts summarizing the best birding areas in the province. The third provides information on conditions such as weather, snakes, poisonous plants, and insects. And the fourth presents a systematic list of bird species and a brief statement of their status. Cross-indexing of localities and species names allows the reader to find information quickly.

Accounts are provided for 217 localities in Ontario — actually many more localities than this are included when you consider that places like Toronto include dozens of more specific locations. The book achieves two major objectives. First it discusses those species one would normally find in an area and locates major 'hot spots' for rarities (Point Pelee, Long Point, Rondeau Provincial Park and some remote localities such as Winisk and Moosonee). Secondly Goodwin also manages to call to the attention of everyone, birder and none-birder alike, those areas that are especially important to mixed groups of birds. For example, we learn that Lake Ontario between Toronto and Hamilton provides wintering habitat for up to 50% of the wintering waterfowl in southern Ontario! This is one thing that traditional bird books often fail to do.

Being a Westerner with strong opinions on the different approaches to bird-watching exhibited by eastern and western Canadians, I found the indirect insights into 'eastern' human behaviour to be particularly illuminating! Eastern Canadian birders, for

example, seem to be much less affected by the quality of the bird-watching environment than westerners; or why else would this book contain references to so many unsavoury habitats. In fact, with detailed information on how to find 125 sewage lagoons, the book might well have been subtitled "a guide to the sewage lagoons of Ontario"!

I would like to mention two minor problems with the book. Firstly, I think the reader would benefit by the inclusion of a guide map to Ontario with relative positions of the six provincial sub-regions clearly marked (sub-region maps are provided). This would orient anyone moving from one regional map to the next. Secondly, there seems to be little value in the attempt made in the systematic list to summarize the status of birds (7 categories) in 'northern' and 'southern' Ontario. Obviously, given local changes in bird distribution, general summaries over such vast areas are of little use to the birder. This information is best sought in other books such as an *Annotated Checklist of the Birds of Ontario* by James, McLaren and Barlow (1976).

In summary, the book is well-conceived. Goodwin is to be commended for infusing a real sense of the birds and habitats of Ontario and somehow raising the book above the level of "just another bird book".

The value of such a publication lies more in the awareness it generates in terms of preserving habitats (even, perhaps, the sewage lagoons!), than in providing the "lister" with opportunity to check off species on next year's roster. The former serves the best interests of the birds; the latter, as illustrated by the sorrowful, trodden understory of Point Pelee, may not.

— Reviewed by *Wayne E. Renaud*, School of Landscape Architecture, University of Guelph, Guelph, Ontario.

WADER BIBLIOGRAPHIES

Volume 3 of our special report series contains 1364 listed references to the genera *Calidris* and *Limicola*, (price: U.S. \$7.00). Volume 4 contains 394 listed references to the genus *Phalaropus*, (price: U.S. \$4.00). Both prices include surface mail postage. For air mail postage, add U.S. \$1.00. These attractively covered blue paperbacks are available from Ottenby Bird Observatory, Pl. 1500, S-380 65 Degerhamn Sweden.

A BIRDER'S GUIDE TO CHURCHILL

JAMES A. LANE and BONNIE CHARTIER. 1983. L & P Press, Denver, 62pp. Paperback \$6.50.

"A hike across the tundra is one of the great experiences of Churchill. Each footstep, sinking softly into the deep spongy carpet of mosses, gives an exquisite feeling of walking across a plush rug ... The air is filled with the strange, delightful calls of courting shorebirds."

This quotation will bring back fond memories to anyone who has participated on one of the Saskatchewan Natural History Society's annual field tours to Churchill. It partially explains why Churchill is invaded every June by a migration of birdwatchers intent on observing arctic birds at their tundra nesting grounds.

This book begins with a summary of the region's history, topography, vegetation and weather. A section titled "Progression of Summer" provides a useful summary of the arrival of birds, beluga whales and wildflowers. The section "What to Wear" is required reading for any visiting birder.

The bulk of the book describes the birds most likely to be found in any of 8 principal areas. Our field trip observations bear out the authors' account. Each region has its own map showing various lakes, creeks and landmarks. There is also a series of photographs showing the habitat and a few of the birds. Unfortunately many of these photographic reproductions are of poor quality.

An appendix lists some 40 mammals and 300 plants that have been found in the region. This list would have been more useful to the visiting naturalist if an indication of relative abundance, habitat or flowering dates had been included.

The most useful feature of the book is a series of bar-graphs showing the relative abundance of each of 166 bird species on a monthly basis. Most of these agree with observations on SNHS field tours. I would however disagree with the status of the Ross' and Little Gulls. They are listed as "How Lucky Can You Get" (ie. very rare, less than 10% chance of finding). For the last three years our tours have found these birds on a regular basis — although one does need to know where to look.

I would recommend this book to any birder, especially those who plan to join our Churchill tour this June. It is available from the Blue Jay Bookshop, Box 1121, Regina, Saskatchewan. S4P 3B4 — Reviewed by *Stan Shadick*, 3F-1800 Main Street, Saskatoon, Saskatchewan. S7H 4B3

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C.S. Houston at Osprey nest platform
Frank Scott

FOOL HEN: The Spruce Grouse on the Yellow Dog Plain

WILLIAM L. ROBINSON. 1980.
University of Wisconsin Press,
Madison, Wisconsin. 221 pp.
Hardcover \$18.50 U.S.

According to the dust jacket this "is the first book devoted fully to the Spruce Grouse." The book presents information on all aspects of the biology of the Spruce Grouse and does so in exceptionally good style. The information is accurate and detailed and is presented in such a manner as to be very readable and enjoyable to the amateur and yet still be very valuable to professional



Young Spruce Grouse

G.L. Holroyd

biologists for its extensive facts on Spruce Grouse.

The book contains sections on habitat, behaviour, growth, plumages, physiology, diseases, population ecology and Spruce Grouse predators, and is based on the author's work on the Yellow Dog Plain of northern Wisconsin. Robinson describes the Spruce Grouse in full and interesting detail in each of the above sections. The only fault I could find in this book was the poor quality of the photographs.

I thoroughly enjoyed reading this book, learning much about this quiet, unobtrusive species which inhabits Saskatchewan's coniferous forests.

— Reviewed by *Wayne C. Harris*, Box 414, Raymore, Saskatchewan. S0A 3J0

AN ADDRESS BOOK FOR NATURALISTS

Quotations collected by MARGARET MORSE NICE. Wood engravings by SYLVIA HAHN. Edited and arranged by DORIS HUESTIS SPEIRS. Natural Heritage/Natural History Inc., P.O. Box 69, Postal Station H, Toronto. M4C 5H7. Hardcover \$9.95 plus \$1. postage.

To quote from *An Address Book for Naturalists*, Margaret Morse Nice is, "probably the most famous woman ornithologist in the world. A trained zoologist, active environmentalist and prodigious writer, she was also a loving wife and mother." She collected quotations from a wide variety of writers, planning to use one to begin each chapter of her autobiography, *Research is a Passion with Me*, which was edited for publication after Dr. Nice's death by Doris Huestis Speirs, a long-time friend and herself a noted ornithologist. Instead of using the collection of quotations in the autobiography, Speirs has chosen to put them together in a separate publication.

Speirs has selected a theme for each letter of the alphabet, and quotations precede the pages for the appropriate addresses. For example, B's theme is Beauty. Sylvia Hahn has complemented this letter, as she has all others, with a delightful wood engraving: a bee climbs up the B which introduces the pages for "B's" and the theme Beauty. There are also seven full page wood engravings.

Unfortunately, the space for addresses — which should be basic in

an address book — is restricted. For most letters of the alphabet, there are 16 sections of 4 lines each, allowing space for one change of address in our transient society, or allowing for 32 names and addresses of two lines each. Since the book is so attractive that you might wish to keep using it indefinitely, it would have been better in looseleaf form so that an occasional address page could be changed or added without disturbing the rest of the book. However, despite the space limitations, this delightful collection of unusual quotations makes looking up an address both pleasant and inspirational.

"I applied mine heart to know, and to search, and to seek out wisdom and the reason of things", the quotation from Ecclesiastes which introduces T's theme, Truth, is certainly a reflection of the life of Dr. Margaret Morse Nice to whom this book is a tribute.

— Reviewed by *Mary I. Houston*,
863 University Drive, Saskatoon,
Saskatchewan. S7N 0J8



Cuckoo Bumble Bee Fred W. Lahrman

THE SINKING ARK. A New Look at the Problem of Disappearing Species.

NORMAN MEYERS. Pergamon Press,
Oxford 1979. xiii plus 307 pages. \$12.50
U.S.

I read Norman Meyers' *The Sinking Ark* at the same time as the more celebrated work of Alvin Toffler's *The Third Wave*. The latter will be read by many seeking to realign their life aims as Toffler's projected "third wave" rolls over us, but people other than naturalists concerned with disappearing species should read Norman Meyers' book, too.

Several statements from the end of the book form a suitable preface to this review. Meyers proposes that a small fraction of the amount spent on bringing up a child to the completion of a university course at the bachelor's level (say \$80,000) spent on global conservation "would help to ensure each child a worthwhile patch of this earth-home to spend the rest of his or her life in."

"...the challenge of conservation of species," Meyers' goes on to say, "is a microcosm of broader problems that arise from integrated living in the global village ... yet ... hardly any other problem receives as little attention as that of disappearing species."

The Sinking Ark is a thoroughly-researched modern treatment of the problem. It contains sufficient numerical data to indicate the magnitude of the problem, and it analyzes in stark economic terms the cost of not preserving sufficient habitat to maintain wild species (Chapter 4). Meyers points out the value of rare plants as sources of new genetic stock and the value of animal and plant extracts as drugs involved in cancer therapy, or their value as sources of raw material for

industrial processes, or as new foods or dietary supplements. These "bring immediate utilitarian benefit to society." In the long term, however, what is emphasized is the maintenance of ecosystems rather than isolated heroic preservation of certain species.

The Sinking Ark has twenty chapters, grouped in three parts:

1. The Problem of Disappearing Species
2. Tropical Moist Forests
3. A Comprehensive Strategy for Conservation of Species

There is a useful index and a list of selected references, mainly recent ones up to 1978. This reviewer would have preferred references given on the page as footnotes rather than by chapter at the end of the book. There are a few typographic and word choice errors. The reviewer's main criticism is the disproportionate amount of time

spent on the analysis of species disappearance through destruction of tropical rain forests, with little more than acknowledgement of the poor protection afforded to grasslands and Mediterranean type zones (Chapter 15). However, Meyers' thesis is that the tropical moist forests are at greatest risk.

Responsible naturalists and, in fact, any persons who claim to be active conservationists should read this book carefully. It is a sound and readable guide to making rational decisions as a citizen as to what is real protection for the future and the future of our children, rather than short term gain in terms of cheap plywood from tropical forests or cheap beef raised where the Amazon rain forest once was!

— Reviewed by *Jim Jowsey*, 2635-19th Avenue, Regina, Saskatchewan. S4T 1X2

UPCOMING SNHS ACTIVITIES

***Whooping Crane Tour**

Plan to join this escorted tour and observe some of these majestic but endangered birds as they stop over on their fall migration. The tour departs Saskatoon on September 29 and October 6. The tour cost (\$65) covers leadership and transportation for this one day event. For reservations, write:

Saskatchewan Natural History
Society
Box 1784
Saskatoon, Saskatchewan. S7K 3S1.

***Annual SNHS Fall Conference**

This year's meeting will be hosted by the newly formed Melfort Natural History Society on the weekend of October 26-28. An exciting variety of program events is planned. Be sure to reserve this date on your calendar. More details later.

WANTED: BUG COLLECTORS

The Saskatchewan Museum of Natural History would like to hear from any individual who has collected insects in Saskatchewan. If you have an insect collection, small or large that is properly documented with date and locality of specimens collected, the museum would appreciate the opportunity to view the collection. The museum strives to gather as much information about Saskatchewan's natural history as possible and entomology is but one aspect. Your collection can contain valuable information on the life history and distribution of Saskatchewan insects. And who knows, you may have an insect that is a new record for Saskatchewan. If you have a collection, please contact: KEITH RONEY, Curator of Invertebrates, Saskatchewan Museum of Natural History, Wascana Park, REGINA, Saskatchewan S4P 3V7.

LETTERS

MORE RACCOONS

After submitting the article "Further Saskatchewan Raccoon Sightings," the author came upon two more evidences of raccoons in this area. Their distinctive tracks were seen at a farm slough 4 km east of Rosthern in June, and at Damour Lake, 25 km north of Blaine Lake, 26 October. Both sets of tracks, also seen by Jim Friesen, were compared with the illustrations in Olaus J. Murie's *A Field Guide to Animal Tracks* (Boston: Houghton Mifflin, 1954). — V.C. Friesen, P.O. Box 65, Rosthern, Saskatchewan. S0K 3R0

TO OUR CIRCULATION MANAGER

Enclosed please find cheque for \$133.53.

This is from the now defunct *White Bear Conservation Club*. In return I would like a 2 yr. subscription to the Kyle Composite School — \$24.00 and the balance to go to the Conservation Fund.

— Sig Jordheim

"YOU WANT AN ORANGE?"



Least Chipmunk

H.G. Knight

